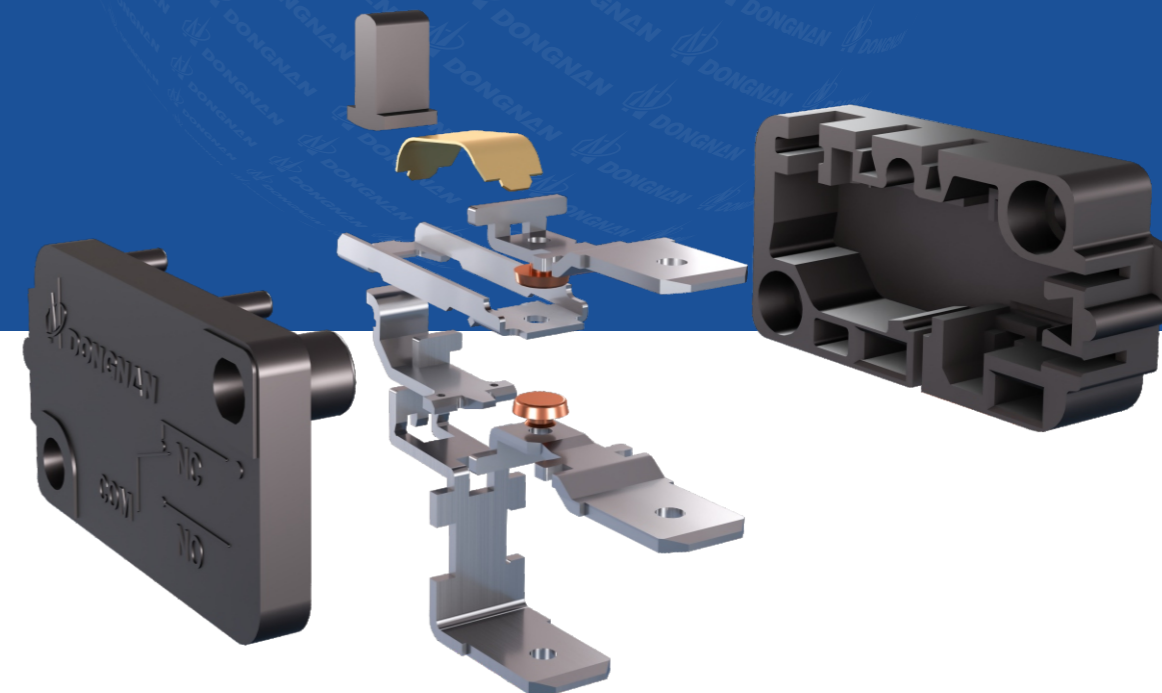


東南為您提供專業的微動開關解決方案  
DONGNAN provide you professional micro switch solutions.

**東南電子股份有限公司**  
**DONGNAN ELECTRONICS CO.,LTD.**  
地址：浙江省乐清经济开发区纬十一路218号  
ADD: No.218 Weishiyl Rd, Yueqing Economic Development Zone,  
ZheJiang Province, China P.C.325600  
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E-mail: dongnan@switch-china.com  
Http://www.switch-china.com



2022  
**MICRO SWITCH**  
**微動開關**  
產品畫冊 PRODUCT BROCHURE



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

TO PROVIDE A SAFE AND RELIABLE ON-OFF SERVICE, LET ELECTRIC  
APPLIANCES MORE PERFECT

[www.switch-china.com](http://www.switch-china.com)



**DN-SWITCH**

**Since 1987** 樂清縣東南電子元件廠成立，主要從事輕觸開關和撥動開關的生產  
Yueqing County DONGNAN Electronic Component Factory established, mainly engaged in tact switches and toggle switches

**1995** 更名為樂清市東南電子有限公司，開始KDC-A11、KDC-A04、PS4電源開關的生產，產品主要應用於彩色電視機和計算機  
Renamed as Yueqing DONGNAN Electronics Co., Ltd., and started production of KDC-A11, KDC-A04, and PS4 power switches  
Products are mainly used in color TV sets and computers

全部開關產品通過CCEE長城認證；  
All switch products passed the CCEE certification;

開始與日本日立（福建）公司合作，向其提供電視機用電源開關。  
Cooperated with Japan's Hitachi (Fujian) Co., Ltd., to provide it power switch for TV use.

**1996** 開始KW3A、KW4A微動開關的研發和生產  
Started development and production of KW3A and KW4A micro switches.

**1997** 開始與希貴、晶石公司合作，研發生產應用於微波爐的系列開關  
We started to cooperate with Heygey and JENS, develop and produce switch series for microwave ovens

**1999** 電源開關部和微動開關部搬遷至樂成鎮金溪工業區  
Power switch department and micro switch department moved to Jinxi Industrial Zone, Yuecheng Town

通過ISO9002質量體系認證  
Approved by ISO9002

微動開關通過“美的”的認可并開始合作  
Our micro switch was approved by Midea and started to cooperate

**2000** KW3A、KW4A、KDC-A11、PS4等各系列產品通過了德國VDE、瑞典SEMKO、芬蘭FIMKO、丹麥DEMKO挪威NEMKO、歐盟CE認證  
KW3A, KW4A, KDC-A11, PS4 and other series of switches got VDE, SEMKO, FIMKO, DEMKO, NEMKO & CE certifications in succession

**2001** UL目擊試驗室成立。所有產品通過了美國UL認證  
UL Witness Laboratory established. All of our products got UL certification

**2002** 電飯煲開關 獲實用新型專利，專利號ZL 01 2 38192.6。  
The rice cooker switch obtained the utility model patent, with patent No. of ZL 01 2 38192.6.

KW4A ( S ) 微動開關開發成功并投產  
KW4A(S) micro switches developed and put into production

與墨西哥H3公司合作開發了電烤箱門控開關SP02系列和電壓轉換器開關KHZ2系列  
Cooperated with Mexico H3 company, we developed electric oven door switch SP02 and voltage converter switch KHZ2

質量體系認證改版為ISO9001：2000版  
Revised to ISO9001: 2000 version

榮獲美的公司頒發的2002年度“優秀供應商”稱號  
Won 2002 “Excellent Supplier” , issued by Midea

**2003** KW10系列微動開關開發成功并通過了美國UL、德國TUV認證  
KW10 series micro switches developed and got UL and TUV certification

所有產品的CCEE認證全部改版為CQC認證  
All our CCEE certifications revised to CQC certification

**2003** 企業注冊資金增至200萬元，并獲得了企業自營出口權  
Registered capital of our company increased to RMB2, 000,000, and obtained the right of export independently

通過SAMSUNG公司的認可并開始合作  
Approved by SAMSUNG and started cooperation

榮獲了美的公司頒發的2003年度“優秀供應商”稱號  
Won 2003 “Excellent Supplier” by Midea

**2004** KDC-A04系列電源開關通過了美國UL認證  
KDC-A04 series of power switches got UL certification

公司與自動化研究所合作開發并制作了“開關特性測試分選機”，提高了產品的出廠合格率，開啓了自動化生產的進程  
Our company cooperated with Automation Research Institute, developed and produced “switch characteristic test sorting machine” , which improved ex-factory qualification rate of products, and we start process of automatic production

開發了MS1系列微動開關  
Developed MS1 series of micro switch

**2005** 經過多年的積累，我們擁有了自己的試驗室、模具制造設備、衝壓設備及自動化生產設備  
After years of accumulation, we have our own laboratory, tooling manufacturing equipment, stamping equipment and automatic production equipment

開發了第一款防水型微動開關WS1  
The first waterproof micro switch series WS1 was developed

**2006** 與九陽小家電建立了合作關係  
We established cooperation with Joyoung

與格蘭仕建立了合作關係  
We established cooperation with Galanz

防水型微動開關WS1通過了德國TUV認證  
Waterproof micro switch WS1 series got TUV certification

8月成立了樂清市東南電子有限公司工會  
The union of Yueqing DONGNAN Electronics Co., LTD established in August

第一次參加了德國慕尼黑電子元器件博覽會  
Attend electronica 2006 in Munich, Germany

**2007** 先後與機頂盒行業領軍者天柏，百一，同洲等公司建立了合作關係  
We established cooperation with set-top box industry leader DVN, Prime, COSHIP etc.

第二款防水微動開關WS2誕生并通過了德國TUV認證  
The second series of waterproof micro switch WS2 developed and got TUV certification

5月成立了樂清市東南電子有限公司黨支部  
Party branch of Yueqing DONGNAN Electronics Co., LTD established in May

**2008** 樂清經濟開發區緯七路新廠房破土動工  
New factory on Weiqi Rd, Yueqing Economic Development Zone start construction

按鈕開關 獲實用新型專利，專利號ZL 2007 2 000035463.7  
Our push button switch obtained utility model patent, patent No. ZL 2007 2 000035463.7

參加了俄羅斯莫斯科國際電子元器件博覽會  
Attend Expo electronica 2008 in Moscow, Russia

- 2008 注册資金由200萬元增至1100萬元  
Registered capital increased from RMB 2 million to RMB11, 000,000
- 通過松下Panasonic的承認  
Approved by Panasonic
- 參加臺灣海峽兩岸秋季電子展  
Attend Taiwan cross strait Electronic Exhibition
- 第二次參加了德國慕尼黑電子元器件博覽會  
Attend electronica 2008 in Munich, Germany
- KW3A微動開關 25(10)A 250VAC通過了TUV認證  
KW3A micro switch 25 (10) A 250VAC got TUV certification
- 2009 東南電子(順德)辦事處成立  
DONGNAN Electronics (Shunde) office established
- 參加了南美巴西國際電子元器件博覽會  
Attend electronicAmericas 2009 in Sao Paulo, Brazil
- 樂清經濟開發區緯七路288號新建廠房竣工并驗收通過  
New plant at No. 288, Weiqi Road, Yueqing Economic Development Zone be completed and accepted
- 宋湖工業區分廠、西金路分廠搬遷至樂清經濟開發區新廠，公司整體搬遷開始啓動  
Songhu Industrial District Branch, Xijin Road Branch moved to our new factory in Yueqing Economic Development Zone, and overall relocation of the company starts
- 2010 公司總部遷入新建廠區—樂清經濟開發區緯七路288號  
Our headquarters moved to newly-built factory—No. 288, Weiqi Road, Yueqing Economic Development Zone
- 通過了艾美特AMT承認  
Approved by AIRMATE AMT
- 通過了“美的空調”承認  
Approved by Midea Air Conditioner
- KW3A自鎖開關獲發明專利，專利號 ZL200610029542.7  
KW3A self-lock switch obtained invention patent, patent No. ZL200610029542.7
- 2011 建立ISO14001環境管理體系、OHSAS18001職業健康安全體系  
We approved by ISO14001 & OHSAS18001
- 2013 微動開關、防水開關系列共獲10項實用新型專利  
In 2013, micro switch and waterproof switch series won 10 utility model patents
- 2014 獲“樂清市名牌商標”稱號  
We won the title of "Yueqing Famous Brand Trademark "
- 2015 獲得美的廚房電器“精誠合作15年供方獎”  
We won “Supplier Award for 15 years of sincere cooperation “by Midea Kitchen Appliance
- 我們追求卓越，樹立品牌，先後獲得開關各類專利30多項，更獲得了國內外各大公司的認可  
We pursue excellence and establish the image of our brand. We have successively obtained more than 30 patents for switches, and have been recognized by major companies domestic and abroad.
- 注册資金增至5000萬元，并獲得“溫州市知名商標”稱號  
Registered capital increased to RMB 50,000,000, and won “Wenzhou Famous Trademark"
- 獲得松下優秀供應商稱號  
We obtained Excellent Supplier title from Panasonic.

- 2015 開發設計充電槍及樁端、車端電控組件并取得專利  
Develop and design charging gun, charging point, automotive electronic control components and obtained patents
- 2016 更名爲東南電子股份有限公司，登陸新三板，股票代碼：839543  
Renamed as Dongnan Electronics Co., Ltd, listed on the New 3 board, stock code: 839543
- 2017 獲國家高新技術企業稱號及省著名商標稱號。被評爲溫州市企業技術研究開發中心，市級企業技術中心  
We won the title of National High-tech Enterprise & Provincial Famous Trademark. Be named as Wenzhou Enterprise Technology Research and Development Center & Municipal Enterprise Technology Center.
- 通過Whirlpool承認  
Approved by Whirlpool
- 通過B/S/H承認  
Approved by B/S/H
- 獲得泓首翔電器優秀供應商稱號  
We obtained Excellent Supplier title from Home Culture Appliance
- 獲得億達電器優秀供應商稱號  
We obtained Excellent Supplier title from Yida Home Appliances
- 獲得美的廚房電器戰略供應商稱號  
We obtained Strategic Supplier title from Midea Kitchen Appliances
- 獲樂清名牌產品稱號，注册資金增至6258萬  
We won the title of Yueqing Famous brand Product, registered capital increased to RMB62, 580,000
- 2018 參加日本國際電子元器件、材料及生產設備展覽會  
Attend Internecon Japan 2018 in Tokyo Japan.
- 5月14日我司緯十一路新廠區建設項目正式開工，并舉行了隆重的開工儀式  
Our new plant construction project on Weishiyi Rd started on 14th May, and a grand ceremony was held.
- 2019 通過HITACHI 承認  
Approved by HITACHI
- 參加印度國際電子元器件及生產設備博覽會  
Attend ep India 2019 in India
- 取得IATF16949 汽車行業質量管理體系  
Approved by IATF16949
- 針對汽車市場推出一系列開關  
Introducing a series of micro switches for automobile market
- 2020 企業被認定爲浙江省企業技術中心，獲得樂清制造50強第三十一名。  
Be recognized as Enterprise Technology Center of Zhejiang Province  
The 31st of TOP 50 of Yueqing Manufacturing Enterprises
- 獲得美的戰略金鼎獎  
We obtained Midea Strategy Golden Tripod
- 2021 獲得樂清制造50強第二十六名。  
The 26th of TOP 50 of Yueqing Manufacturing Enterprises
- 6月25日公司總部遷入新建廠區—樂清經濟開發區緯十一路218號  
Our headquarters moved to new plant—No.218 Weishiyi Rd, YueQing Economic Development Zone on June 25th.

# 安全 環保










Safety and environmental protection

Since 1987, we focus on switches

認證 安規

Safety and regulation certification

認證標誌一覽表  
Certification mark table

認證標誌 Mark	國家 Country
	中國 China
	歐洲 Europe
	德國 Germany
	美國 加拿大 USA Canada
	韓國 Korea
	挪威 Norway
	芬蘭 Finland
	丹麥 Denmark
	瑞典 Sweden



## 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 <sup>+6</sup> )	1,000 ppm
多溴化聯苯類 Polybrominated Biphenyls	(PBB)	1,000 ppm
多溴二苯醚類 Polybrominated Diphenyl 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
鄰苯二甲酸二異丁酯 Diisobutyl phthalate	(DIBP)	1,000 ppm

## 完全按照RoHS 2.0指令，限制10種有害物質的使用。

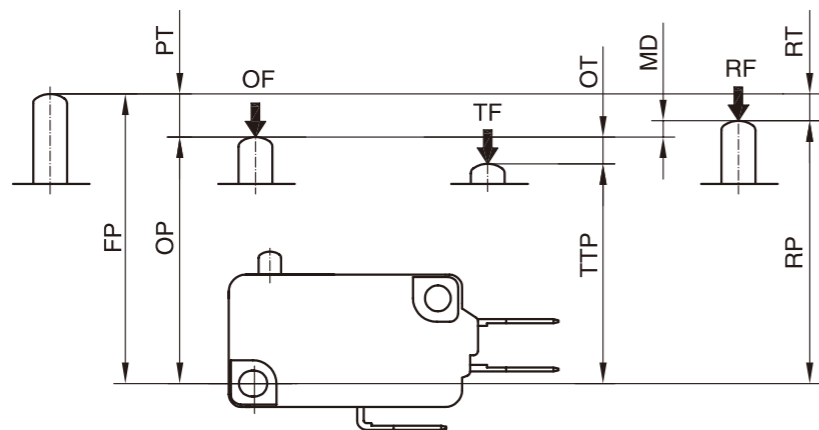
Entirely according to RoHS Directive, restrict using 10 hazardous materials.

為了生產出全球都能安心使用的產品，東南電子採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.

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或釋放位置到動作位置間的位移 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



開關額定值標識說明

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	功率因數不小於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 $5 \times 10^4 = 50000$ (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

◆ 關於開關的使用 Concerning how to use switches

資料中標明的額定性能值，在沒有特別指明的情況下，是指在標準試驗狀態(溫度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，在產品目錄中選擇適合的開關。  
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) 關於使用負載 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。採購時，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)

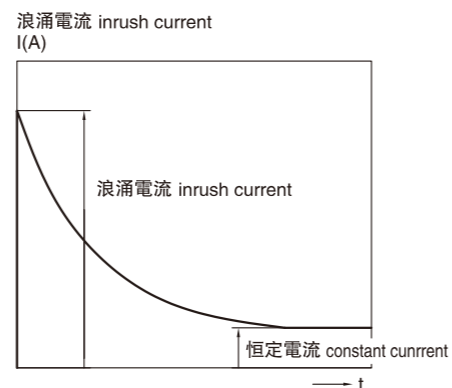
Inductive load: power factor more than 0.4 (AC), time constant less than 7ms (DC)

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) 關於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脈衝出錯等故障。為了避免這種影響，請採取下面措施：

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) 關於微小負載的使用 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，請選用使用區域內的開關，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) 關於接點保護電路 Regarding contact protection circuit

- 為了延長接點的壽命，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<sub>3</sub>和水分會生成硝酸(HNO<sub>3</sub>)，腐蝕內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<sub>3</sub> & moisture generated nitrate acid (HNO<sub>3</sub>) 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		
	△*	○	<p>*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.</p>	<p>CR的標準是 CR standard C: 接點電流1A為1~0.5(μF) contact current 1A is 1~0.5(μF) R: 接點電壓1V為0.5~1(Ω) contact voltage 1V is 0.5~1(Ω) 根據負載的性質，可能不一致。可以認為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)。</p> <p>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。</p> <p>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).</p>
	○	○	<p>負載為繼電器、螺絲管等的情况下動作時間變慢，電源電壓為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 &amp; 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.</p>	<p>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.</p>

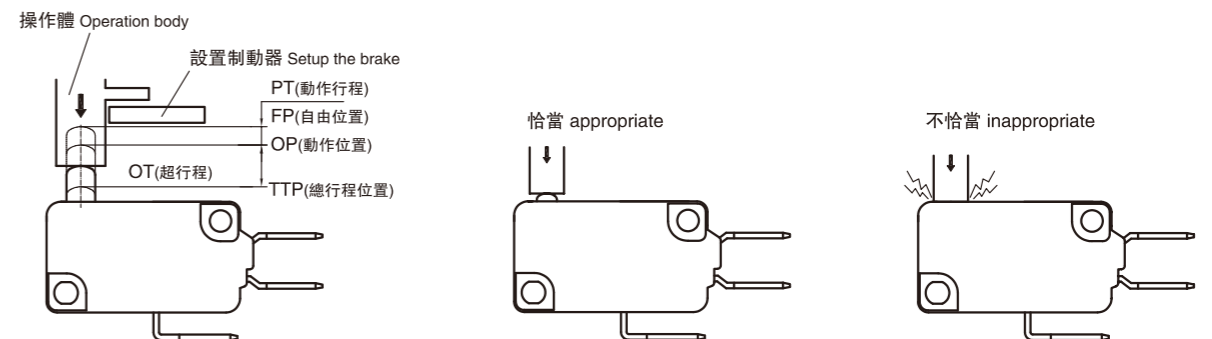
<p>二極管方式 Diode method</p>		<p>×</p>	<p>○</p>	<p>儲存在線圈中的能量通過并聯二極管，以電流的形式流向線圈，在感性負載的電阻部分作為熱能消耗掉。此方法比CR方式的復位時間更慢。 Energy stored in the coil connected parallel with diode flows to the coil in the form of electric current be used as heat energy in inductive load resistance component. Release time by this method is slower than by CR method.</p>	<p>請使用反向擊穿電壓為電路電壓的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.</p>
<p>二極管+齊納 二極管方式 Diode + Zener diode method</p>		<p>×</p>	<p>○</p>	<p>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.</p>	<p>有些環境下負載可能無法工作，因此請使用齊納電壓為電源電壓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.</p>
<p>可變電阻方式 Variable resistance method</p>		<p>○</p>	<p>○</p>	<p>利用可變電阻的定壓特性，確保施加于接點間的電壓不至於過高的一種方法。這種方法下復位時間多少會變慢。 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.</p>	<p>可變電阻的截斷電壓Vc請根據下面的條件選擇。交流時必須為<math>\sqrt{2}</math>倍。 Vc &gt; (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 <math>\sqrt{2}</math> times. Vc &gt; (power voltage × 1.5) However, if Vc setting is too high, high pressure can't be cutoff, the results will become worse.</p>

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.

	<p>對於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.</p>		<p>對於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.</p>
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◆ 機械事項 Mechanical Issue

- (1) 關於操作行程的設定 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內使用。因此安裝開關時，請特別注意：  
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%為標準來安裝。  
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產生誤動作。  
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，同時加到內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.



- 特別提醒：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)，而非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)。特別是在開關安裝有動臂(擺杆)的情況下，操作體如果強行將動臂驅動到超過全行程的位置，則不僅損傷開關內部零件，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) 關於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，則觸點的切換將不穩定，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，則觸點的切換可能會跟不上。  
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)，觸點表面會產生氧化膜，導致接觸不良。  
The operating frequency is extremely low (for less than 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) 關於使用狀態 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.

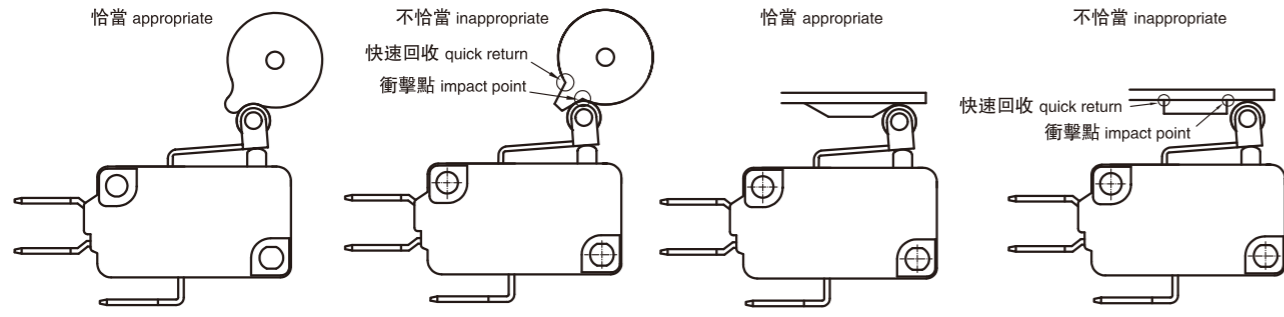
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#### (4) 關於開關的操作方法 Regarding the way how to operate the switch

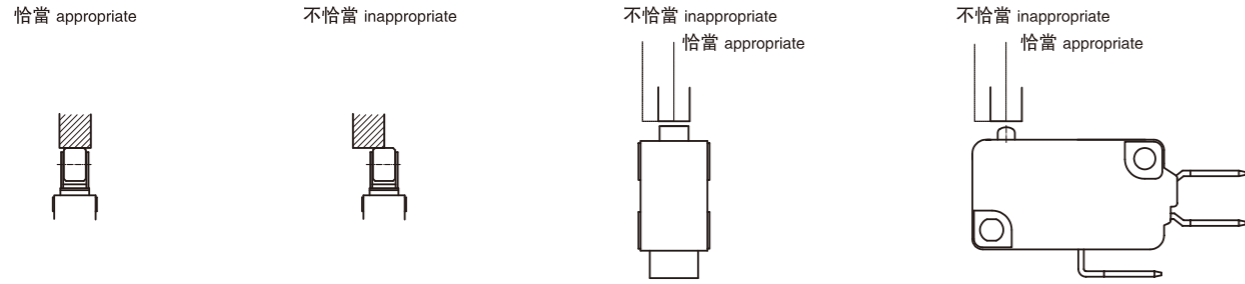
開關的操作方法直接影響開關的性能。操作時應注意：

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.



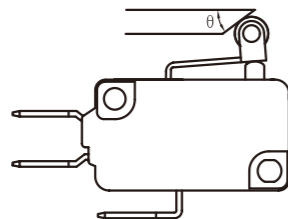
- 操作時請不要在驅動杆上施加偏負荷。否則,局部摩擦可能導致驅動杆的破損和壽命的縮短。Please do not add leaning load on the driving rod when it is in operation. Otherwise, the part friction may cause driving rod breakage and life reduction.



- 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.



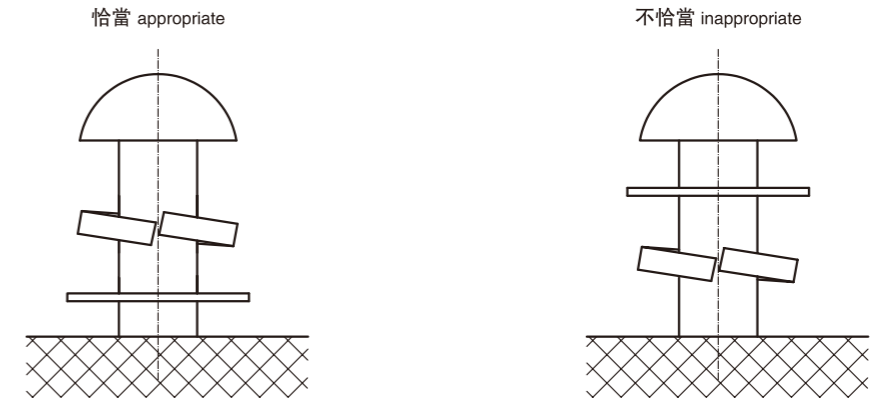
- 在針狀按鈕型中,請垂直按下按鈕。For the needle button type, please press button vertically.
- 滾輪擋塊的角度  $\theta$  請設定在 $30^\circ \sim 45^\circ$ 的範圍內。角度過大,會對動臂造成異常的橫向應力。The roller stop piece's angle  $\theta$  please setup between  $30^\circ$  to  $45^\circ$ . If angle is oversized, it will cause moving arm unusual lateral force to the lever.



#### ◆ 關於安裝 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.



- 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.
- 關於固定劑的使用: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產生壓力,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) 關於和端子的連接 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 $380^\circ\text{C}$ 以下。如果開關在焊接不良的情況下使用,可能會引起異常發熱,燒毀。焊接溫度和時間為 $380^\circ\text{C} \cdot 3\text{s}$ 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。Soldering terminal: When jointing with the soldering irons, please control the soldering iron tip, temperature below  $380^\circ\text{C}$ . If the switch uses in the bad jointing condition, it may cause exceptional heat, then burning. Jointing temperature and time:  $380^\circ\text{C} \cdot 3\text{s}$ . 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:擔心絕緣距離無法確保或附近有其他金屬部件和銅綫時,請使用絕緣隔板來確保絕緣距離。Using of separator: If you're worry that 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.

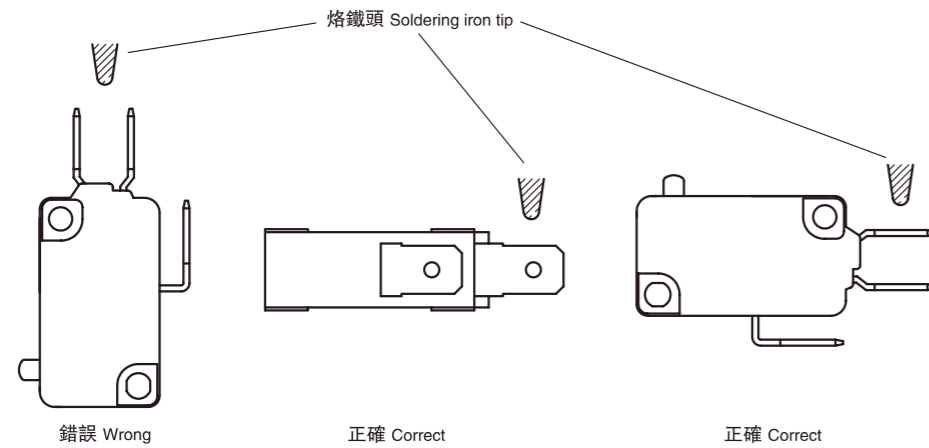


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(3) 焊接注意事項 Soldering issue

- 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線和端子部位施力。

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. 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) 關於使用 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, it maybe will cause switch works abnormally, bad contact.

(2) 關於使用環境 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採取保護措施。  
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<sub>2</sub>S、SO<sub>2</sub>)、氨氣(NH<sub>3</sub>)、硝酸氣體(HNO<sub>3</sub>)、氯氣(CL<sub>2</sub>)等有害氣體和高溫、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<sub>2</sub>S、SO<sub>2</sub>、NH<sub>3</sub>、HNO<sub>3</sub>、CL<sub>2</sub>,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溫濕度範圍內使用。在高溫下使用可能會導致特性改變。如果溫度急劇變化,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) 關於儲存環境 Concerning storage environment

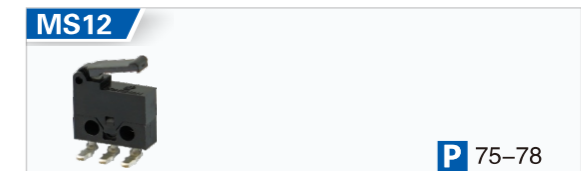
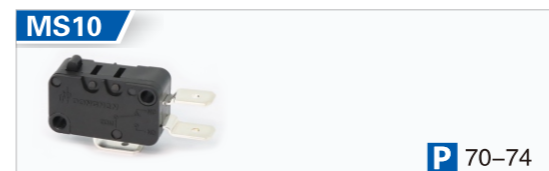
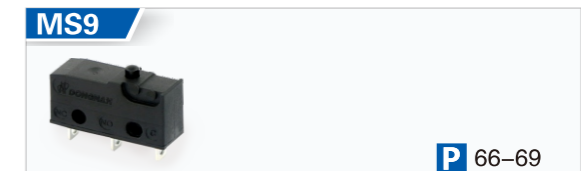
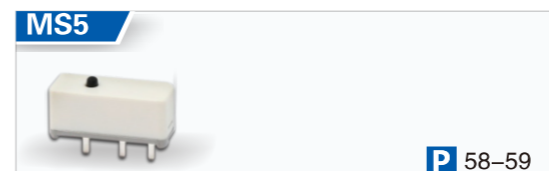
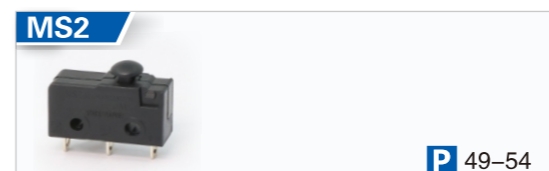
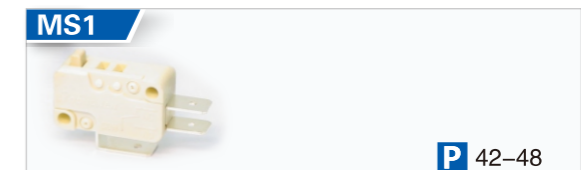
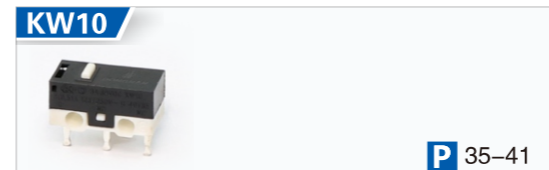
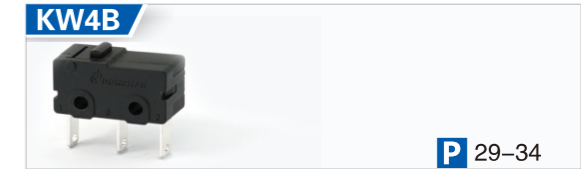
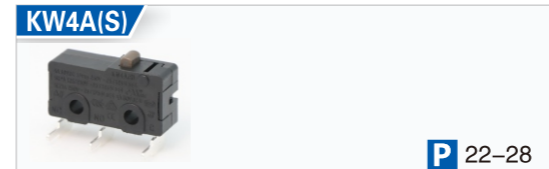
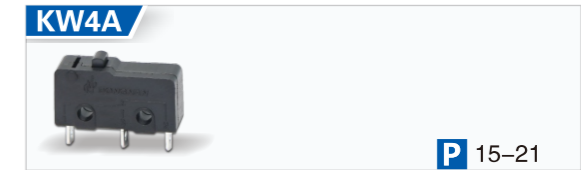
保存開關時，為了防止由于鍍銀端子的硫化變色，請裝入聚乙烯袋中。

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溫、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.

微動開關系列 Micro Switch Series



防水開關系列

Waterproof Switch Series

**WS1**




P 83-89

**WS1L**




P 90-93

**WS2**




P 94-99

**WS3**




P 100-106

**WS4**




P 107-111

**WS5**




P 112-124

**WS6**




P 125-129

**WS7**



P 130-132

**WS8**




P 133-137

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其他開關系列


Other Switch Series

**KDC-A11**




P 138-140

**KDC-A04**




P 141-142

**PS4**



P 143-146

**PS5**




P 147-149

**PS6**




P 150-154

**PS8**




P 155-158

**PS9**




P 159-161

**RS1**




P 162-164

**RS2**




P 165-168

**RS3**




P 169-172

**RS4**




P 173-175

**SS5**



P 176-178

**SP02**




P 179-180

**KXZ2**




P 181-183

**AS1**




P 184-187

**ANQ1**



P 188

**PRS1**



P 189-193

## 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.

- 接線端子種類齊全  
A variety of contact terminals

- 動作力範圍寬  
A variety of models with low operating force to high operating force are available

- 多種溫度等級  
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

- 廣泛應用於各種家用電器、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
絕緣電阻 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
	帶電金屬零件與地(外殼)之間、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground (case), and between each terminal and non-current-carrying metal parts.
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm 雙振幅 Double amplitude
抗衝擊 Shock resistance	破壞:動作力>0.5N: 1000m/s <sup>2</sup> (約100G)max 動作力≤0.5N: 400m/s <sup>2</sup> (約40G)max 故障:動作力>0.5N: 200m/s <sup>2</sup> (約20G)max 動作力≤0.5N: 100m/s <sup>2</sup> (約10G)max Destruction: OF>0.5N: 1000m/s <sup>2</sup> (approx.100G)max OF≤0.5N: 400m/s <sup>2</sup> (approx.40G)max Malfunction: OF>0.5N: 200m/s <sup>2</sup> (approx.20G)max OF≤0.5N: 100m/s <sup>2</sup> (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



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## ◆ 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 溫度等級 Degree of temperature	無標記 No mark: T85,10T105 T:T125 H:T150 G:T200	2 額定值 Ratings
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 1GPA125/250VAC 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	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

◆ 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

<p><b>2</b> 額定值 Ratings</p>	<p>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 .....</p>	<p><b>7</b> 端子類型 Terminal types</p>	<p>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</p>
<p><b>3</b> 接觸形式 Circuit</p>	<p>Z: 轉換式 SPDT T: 常閉(按通)式 SPST-NO D: 常閉(按斷)式 SPST-NC (見說明圖 See illustration)</p>	<p><b>8</b> 動作力(max) Operating force</p>	<p>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.</p>
<p><b>4</b> 驅動形式 Actuator forms</p>	<p>0: 無動臂 No lever A1/1: 短動臂 Short lever A2/2: 長動臂 Long lever A3/3: 中動臂 Middle lever A4/4: 短滾輪臂 Short roller A5/5: 長滾輪臂 Long roller A6/6: 弧形動臂 Arc lever A□/□: 非標準動臂 Not standard lever 注: 1) A 表示動臂安裝在靠近按鈕位置, 無字母A表示動臂安裝在離按鈕較遠位置。 2) □表示非標準動臂的代號, 詳見動臂外形尺寸圖。 Note: 1) A indicate the lever near to the plunger, no A indicate the lever far away from the plunger. 2) □ Indicate not standard lever, details see outline dimension drawings.</p>	<p><b>9</b> 按鈕規格 Plunger spec</p>	<p>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 (見說明圖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.)</p>
<p><b>5</b> 外殼材質 Case material</p>	<p>無標記 No mark 熱塑性 thermoplastic G: 熱固性 thermosetting</p>	<p><b>10</b> 觸點間隙 Contact gap</p>	<p>無標記 No mark: 0.5mm X: 1mm Y: 3mm</p>
<p><b>6</b> 外形特徵 Outline characteristic</p>	<p>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</p>	<p><b>11</b> 附加規格編號和外殼顏色代號, 適用於: Additional specs numbers and case color code apply to:</p>	<p>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; When 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。在沒有附加規格編號時, 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.</p>
<p><b>7</b> 端子類型 Terminal types</p>	<p>A: 250 快接端子 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)</p>		

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◆ 接觸形式說明圖 Circuit illustration

公共端類型 Common terminal types	轉換式 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			

◆ 按鈕規格說明圖 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					

◆ 外形特徵說明圖 Outline characteristic illustration

基本形 Basic form 	平端形 Flat form 	公共端側面形 Side common terminal 
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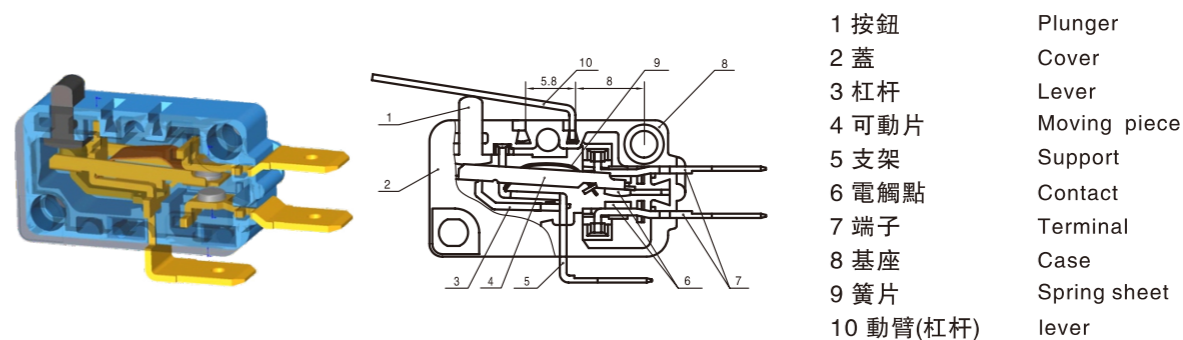
◆ 接線端尺寸 Connect terminal dimensions

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 dimensions				

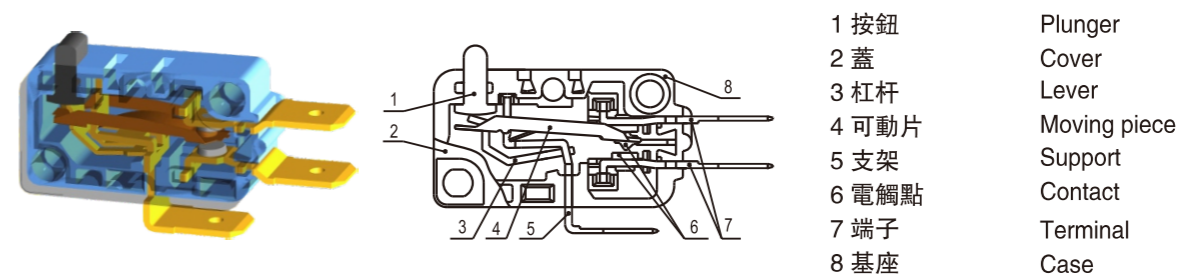
左側面PCB端子 Left side PCB terminal	右側面PCB端子 Right side PCB terminal	焊接端子 Solder terminal	螺孔端子 Screw terminal	快接端子#250之二 Quick connect terminal #250 No.2

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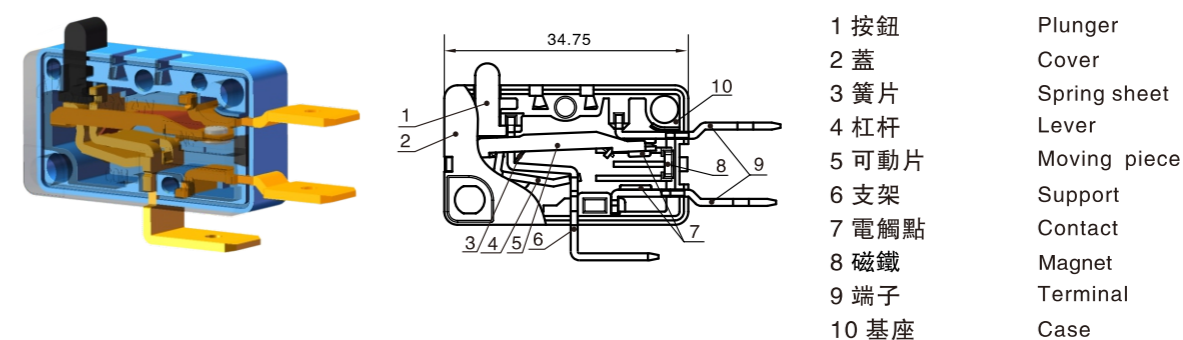
◆ 内部構造圖 Internal configuration drawing



◆ KW3A輕動作力内部構造圖 Internal structure diagram of light operating force



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

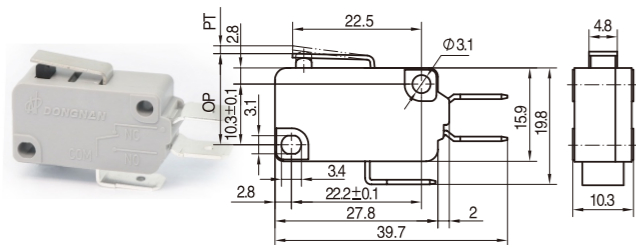


◆ 安裝孔尺寸 Mounting hole dimensions

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

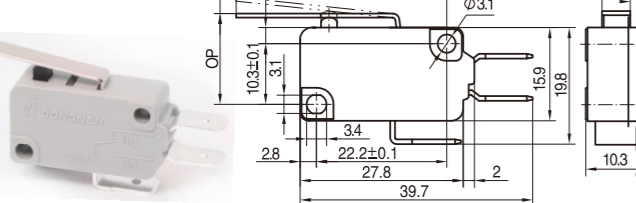
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

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



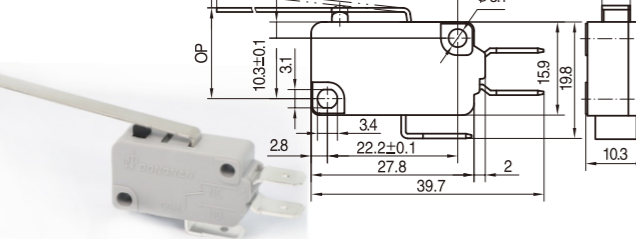
型號 Model	KW3A-16Z1□-A100	KW3A-16Z1□-A150	KW3A-16Z1□-A200	KW3A-16Z1□-A300
OF Max(N)	1.00	1.50	2.00	3.00
RF Min(N)	0.20	0.30	0.50	0.70
PT Max(mm)	1.4			
OT Min(mm)	1.0			
MD Max(mm)	0.5			
OP(mm)	15.8 ± 0.5			

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



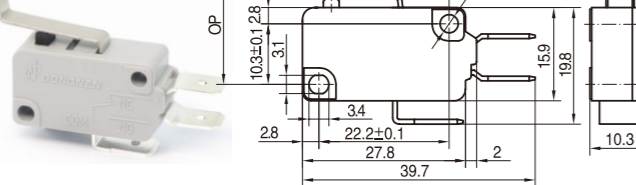
型號 Model	KW3A-16Z3□-A100	KW3A-16Z3□-A150	KW3A-16Z3□-A200	KW3A-16Z3□-A300
OF Max(N)	0.50	0.70	0.90	1.30
RF Min(N)	0.10	0.15	0.20	0.30
PT Max(mm)	4.0			
OT Min(mm)	2.0			
MD Max(mm)	1.0			
OP(mm)	16.3 ± 1.2			

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



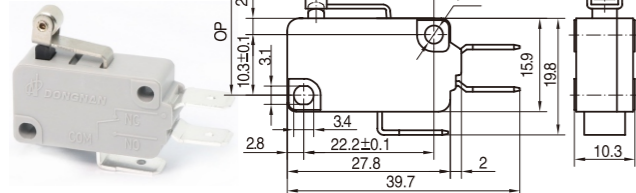
型號 Model	KW3A-16Z2□-A100	KW3A-16Z2□-A150	KW3A-16Z2□-A200	KW3A-16Z2□-A300
OF Max(N)	0.25	0.37	0.50	0.75
RF Min(N)	0.05	0.10	0.15	0.20
PT Max(mm)	8.0			
OT Min(mm)	4.0			
MD Max(mm)	2.0			
OP(mm)	17.2 ± 2.5			

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			

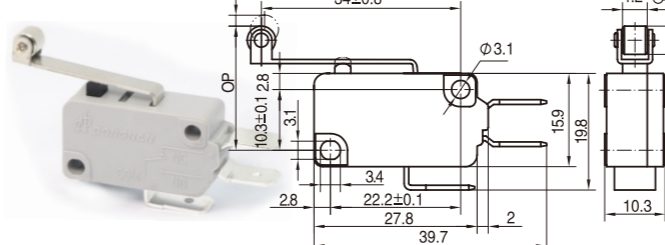
KW3A-16Z4□-A100  
KW3A-16Z4□-A150  
KW3A-16Z4□-A200  
KW3A-16Z4□-A300



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			

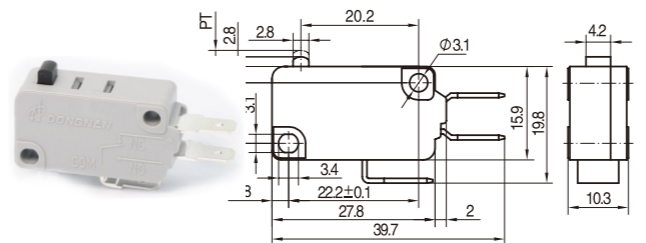
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

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



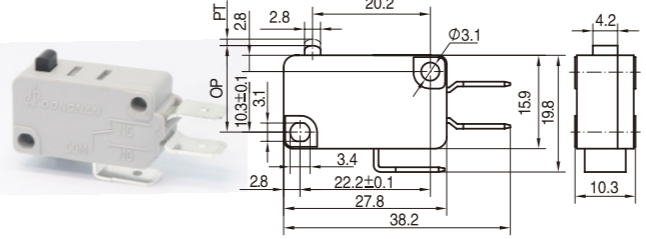
型號 Model	KW3A-16Z5□-A100	KW3A-16Z5□-A150	KW3A-16Z5□-A200	KW3A-16Z5□-A300
OF Max(N)	0.50	0.80	1.10	1.60
RF Min(N)	0.10	0.15	0.20	0.30
PT Max(mm)	4.0			
OT Min(mm)	2.0			
MD Max(mm)	1.0			
OP(mm)	21.4 ± 1.2			

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



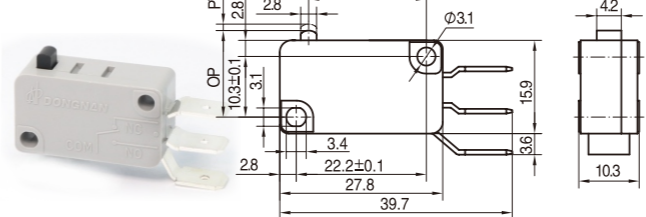
型號 Model	KW3A-16Z0□-A100	KW3A-16Z0□-A150	KW3A-16Z0□-A200	KW3A-16Z0□-A300
OF Max(N)	1.00	1.50	2.00	3.00
RF Min(N)	0.20	0.30	0.50	0.70
PT Max(mm)	1.4			
OT Min(mm)	1.0			
MD Max(mm)	0.4			
OP(mm)	14.9 ± 0.4			

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



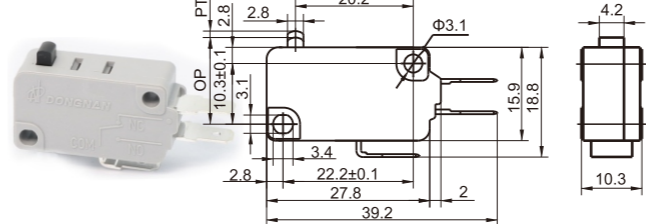
型號 Model	KW3A-16Z0B-A100	KW3A-16Z0B-A150	KW3A-16Z0B-A200	KW3A-16Z0B-A300
OF Max(N)	1.00	1.50	2.00	3.00
RF Min(N)	0.20	0.35	0.50	0.80
PT Max(mm)	1.2			
OT Min(mm)	1.0			
MD Max(mm)	0.4			
OP(mm)	14.9 ± 0.4			

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			

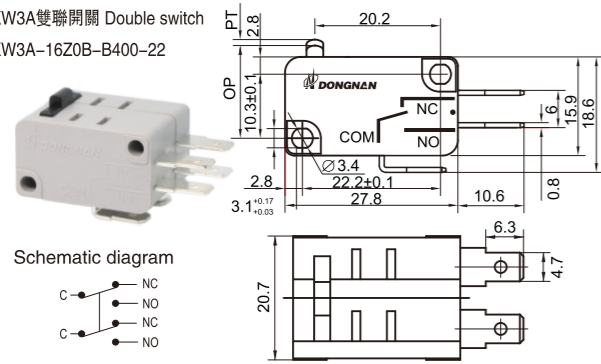
KW3A-5Z0-C020-65B  
KW3A-5Z0-C050-65B  
KW3A-5Z0-C075-65B



型號 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		

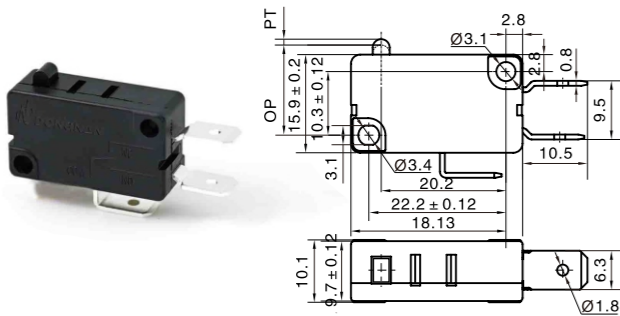
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

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



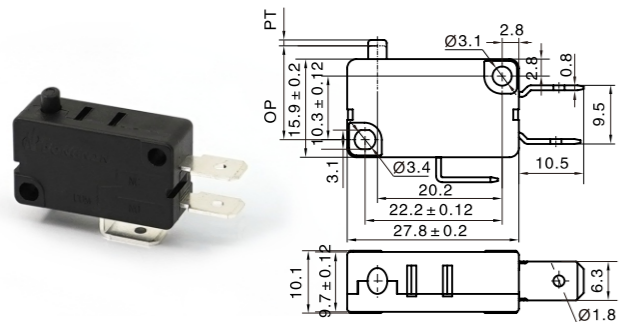
型號 Model	KW3A-16Z0B-B400-22	
OF Max (N)	4.00	
RF Min (N)	1.00	
PT Max (mm)	1.4	
OT Min (mm)	1.0	
MD Max (mm)	0.4	
OP (mm)	14.9 ± 0.5	

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



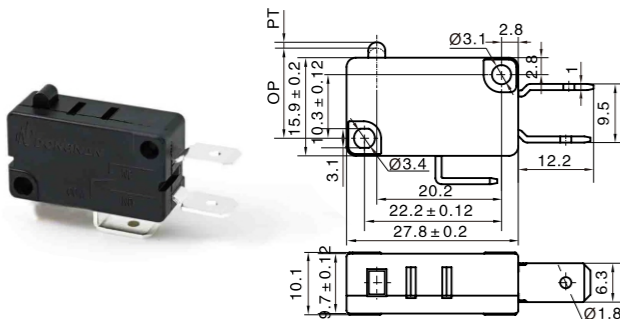
型號 Model	KW3A-15FZ0D-A750Z4	KW3A-15FZ0D-A1000Z4
OF Max(N)	7.50	10.00
RF Min(N)	2.0	3.0
PT Max(mm)	1.2	
OT Min(mm)	1.0	
MD Max(mm)	0.8	
OP(mm)	14.3 ± 0.5	

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	

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KW3A 微動開關組件 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
溫度等級 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、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.	AC3750V, 50/60Hz, 1min
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

<b>1</b> 結構型式 Configuration types	A: 按鈕型 Button type B: 自鎖型 Self lock	<b>4</b> 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
<b>2</b> 額定值 Ratings	見P12表格中額定值 Please see the rating in the form of Page12	<b>5</b> 按鈕顏色 Button color	R:紅色 Red G:綠色 Green B:藍色 Blue (僅適用於按鈕型 Only used in Button type)
<b>3</b> 接觸形式 Circuit	Z: 轉換式 SPDT T: 常開(接通)式 SPST-NO D: 常閉(按斷)式 SPST-NC	<b>6</b> 附加規格編號 Additional spec numbers	適用於: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.





## 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，動作無異響  
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 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	$\geq 100M\Omega$ (500VDC)
接觸電阻 Contact resistance	$\leq 30m\Omega$ (初始值 initial value)
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity
	帶電金屬零件與外殼之間、接線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 .
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 $\leq 0.5N-400m/s^2$ (約40G)max 故障：動作力 $>0.5N-200m/s^2$ (約20G)max 動作力 $\leq 0.5N-100m/s^2$ (約10G)max Destruction: OP $>0.5N-1000m/s^2$ (approx. 100G)max OP $\leq 0.5N-400m/s^2$ (approx. 40G)max Malfunction: OP $>0.5N-200m/s^2$ (approx. 20G)max OP $\leq 0.5N-100m/s^2$ (approx. 10G)max
壽命 Life	機械 $\geq 200,000$ 次;      Mechanical $\geq 2,000,000$ cycles 電氣 $\geq 50,000$ 次      Electrical $\geq 50,000$ cycles
質量 Weight	約25g(無動臂型)Approx. 25g(No lever)
安全認證 Safety approvals	UL、TUV、CE、CQC

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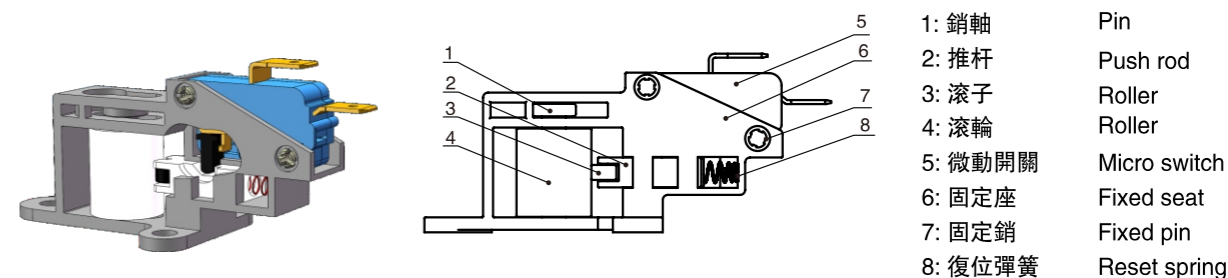
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### ◆ 型號規格命名及含義 Model number legend and meanings

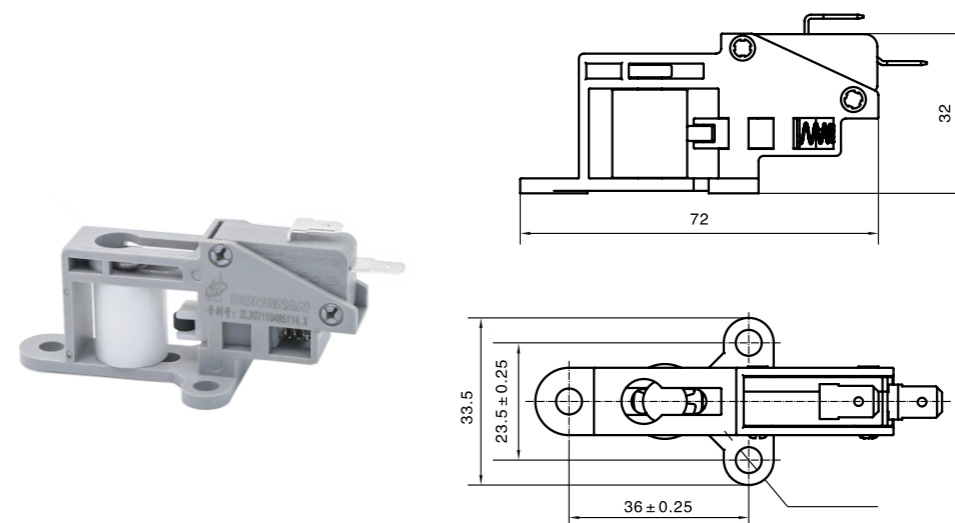
KW3A-G □  
1 2

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

### ◆ 產品構造圖 Internal configuration drawing



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

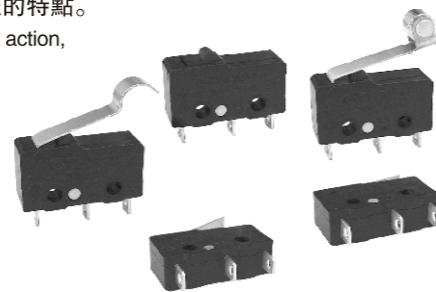


提供安全、可靠的通斷服務，讓電器更完美

## 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 gap, quick action, high sensitivity and small operating travel.
- 長壽命，高可靠。  
Long life, high reliability.
- 接線端子種類齊全  
A variety of contact terminals
- 配備各種形式動臂  
A variety of levers.
- 採用熱固性或熱塑性塑料外殼  
Adopt thermosetting plastic or thermoplastic case.
- 廣泛應用於各種家用電器、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
	帶電金屬零件與地(外殼)之間、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm 雙振幅 Double amplitude
抗衝擊 Shock resistance	破壞: 動作力>0.5N: 1000m/s <sup>2</sup> (約100G)max 動作力≤0.5N: 500m/s <sup>2</sup> (約50G)max 故障: 動作力>0.5N: 300m/s <sup>2</sup> (約30G)max 動作力≤0.5N: 200m/s <sup>2</sup> (約20G)max Destruction: OF>0.5N: 1000m/s <sup>2</sup> (approx.100G)max OF≤0.5N: 500m/s <sup>2</sup> (approx.50G)max Malfunction: OF>0.5N: 300m/s <sup>2</sup> (approx.30G)max OF≤0.5N: 200m/s <sup>2</sup> (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.

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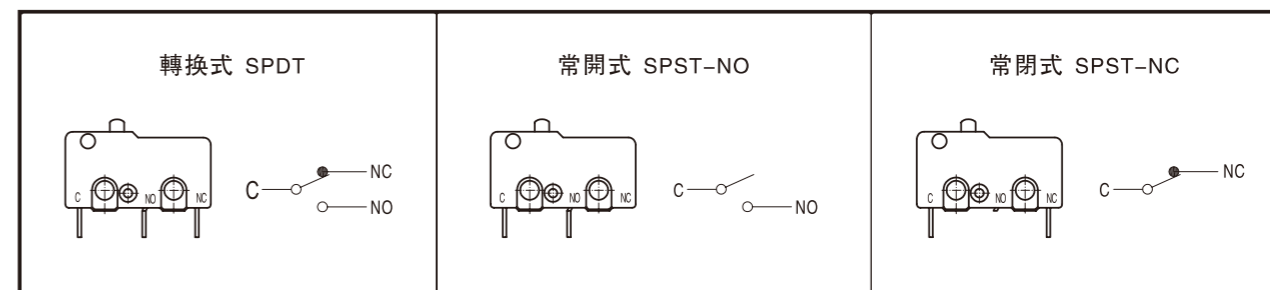
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## ◆ 型號規格命名及含義 Model number legend and meanings

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

<b>1</b> 溫度等級 Degrees of temperature	無標記 No mark: 10T85 10T105 25T125	<b>6</b> 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
<b>2</b> 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	<b>7</b> 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.
<b>3</b> 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)	<b>8</b> 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 Abnormity plunger (見說明圖 see illustration) 注: 若採用本表中未列入的非標準按鈕, 則用此新增按鈕的規格代號(本公司確認)表示。 Note: if adopt other not standard plunger, then indicate with the new spec (confirmed by our company).
<b>4</b> 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.	<b>9</b> 附加規格編號 適用於: Additional spec numbers, apply to:	1)當開關使用了非標準零件如非標準端子時; When used not standard parts such as not standard terminal; 2)當顧客有特殊動作特性值或其它要求時。 When customer has particular operating value or other requirements. 附加規格編號用阿拉伯數字表示, 在沒有附加規格編號時, 該位置空缺。 Additional specs number shows by Arabic numerals. If there is no additional numbers, the place is vacant.
<b>5</b> 外殼材質 Case material	G: 熱固性 Thermosetting S: 熱塑性 Thermoplastic		

## ◆ 接觸形式說明圖 Circuit illustration



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◆ 按鈕規格說明圖 Plunger spec illustration

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

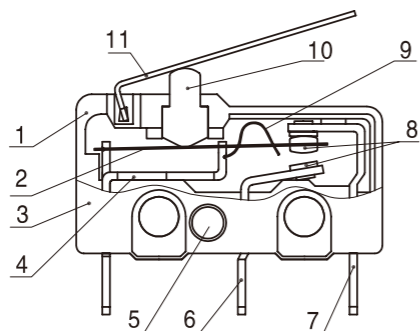
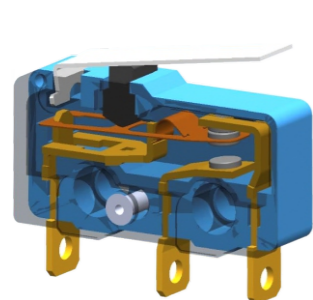
◆ 接線端尺寸 Terminal dimensions

<b>F</b> 焊接端子 Solder terminal 	<b>T</b> 快接端子#110 Quick connect terminal #110 	<b>P</b> PCB端子 PCB terminal 
<b>L</b> 左側面PCB端子 Left side PCB terminal 	<b>R</b> 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 
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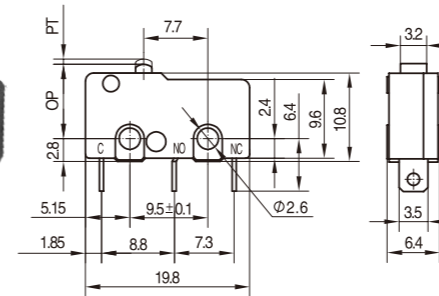
◆ 內部構造圖 Internal configuration drawing



- |           |              |
|-----------|--------------|
| 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       |
| 10 按鈕     | Plunger      |
| 11 動臂(杠杆) | Lever        |

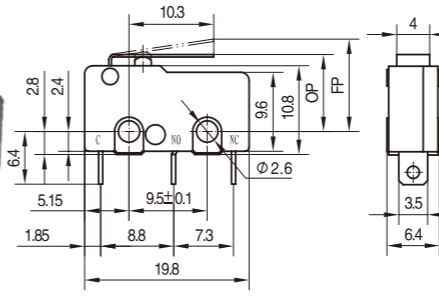
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

KW4A-Z0□F100  
KW4A-Z0□F150  
KW4A-Z0□F200  
KW4A-Z0□F300



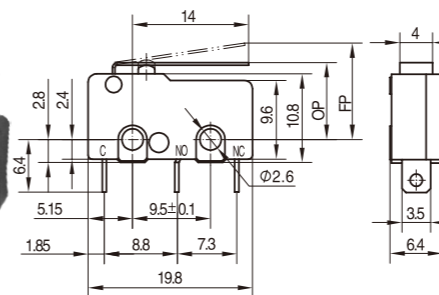
型號 Model	KW4A-Z0□F100	KW4A-Z0□F150	KW4A-Z0□F200	KW4A-Z0□F300
OF Max(N)	1.00	1.50	2.00	3.00
RF Min(N)	0.20	0.35	0.50	0.80
PT Max(mm)	0.8			
OT Min(mm)	0.5			
MD Max(mm)	0.2			
OP(mm)	9.1 ± 0.4			

KW4A-Z1□F100  
KW4A-Z1□F150  
KW4A-Z1□F200  
KW4A-Z1□F300



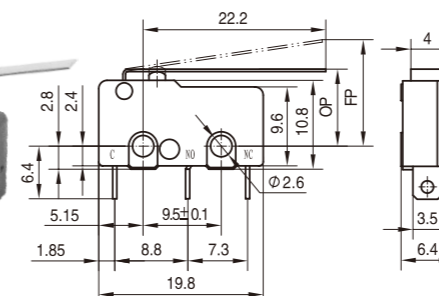
型號 Model	KW4A-Z1□F100	KW4A-Z1□F150	KW4A-Z1□F200	KW4A-Z1□F300
OF Max(N)	0.35	0.60	0.80	1.00
RF Min(N)	0.05	0.15	0.20	0.35
OT Min(mm)	1.5			
MD Max(mm)	0.6			
FP Max(mm)	12.0			
OP(mm)	9.5 ± 0.8			

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			

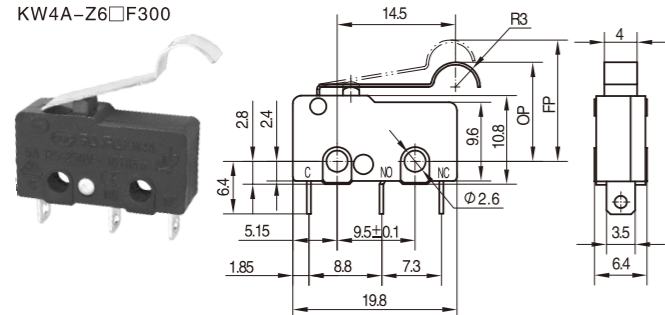
KW4A-Z2□F100  
KW4A-Z2□F150  
KW4A-Z2□F200  
KW4A-Z2□F300



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			

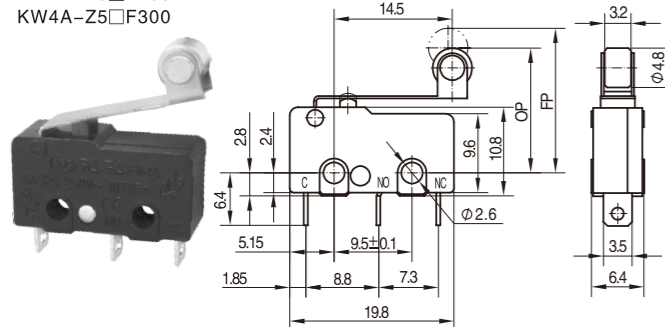
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

KW4A-Z6□F100  
KW4A-Z6□F150  
KW4A-Z6□F200  
KW4A-Z6□F300



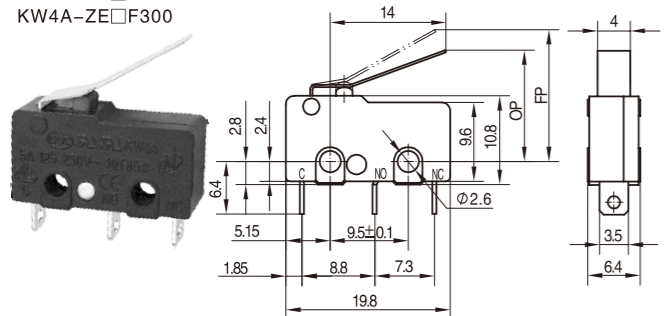
型號 Model	KW4A-Z6□F100	KW4A-Z6□F150	KW4A-Z6□F200	KW4A-Z6□F300
OF Max(N)	0.30	0.45	0.60	0.85
RF Min(N)	0.05	0.10	0.15	0.20
OT Min(mm)	1.2			
MD Max(mm)	0.8			
FP Max(mm)	17.5			
OP(mm)	14.5 ± 1			

KW4A-Z5□F100  
KW4A-Z5□F150  
KW4A-Z5□F200  
KW4A-Z5□F300



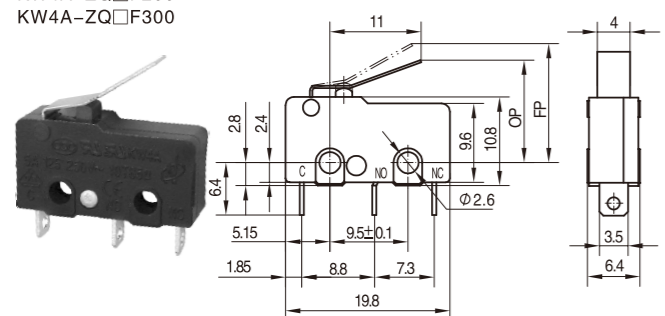
型號 Model	KW4A-Z5□F100	KW4A-Z5□F150	KW4A-Z5□F200	KW4A-Z5□F300
OF Max(N)	0.30	0.45	0.60	0.85
RF Min(N)	0.05	0.10	0.15	0.20
OT Min(mm)	1.2			
MD Max(mm)	0.8			
FP Max(mm)	19.0			
OP(mm)	16.2 ± 1			

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			

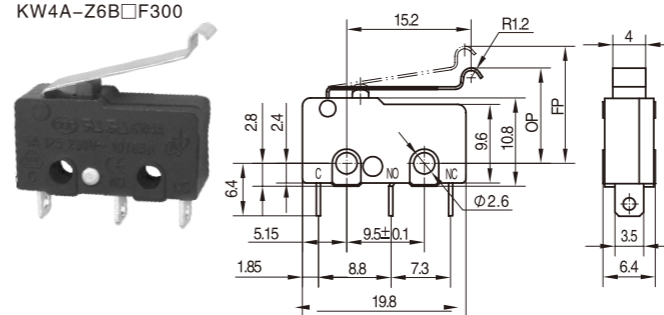
KW4A-ZQ□F100  
KW4A-ZQ□F150  
KW4A-ZQ□F200  
KW4A-ZQ□F300



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
<b>3A</b>		<b>C</b>		<b>K</b>	
<b>N</b>		<b>G</b>		<b>Q1</b>	
<b>J</b>		<b>F1</b>		<b>S1</b>	
<b>J1</b>		<b>6A</b>		<b>5A</b>	
<b>J2</b>		<b>6C</b>			

## ◆ 請正確使用 Please use it correctly

【共通注意事項】請參閱相關頁

【Common use】please refer to related pages

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

(1) 將導線焊接到端子上時，請先將導線穿過端子孔後再進行焊接。

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

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

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

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

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

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

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

## ■ 關於絕緣距離 Concerning insulation distance

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

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

## ■ 關於安裝 Concerning installation

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

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

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

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

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

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

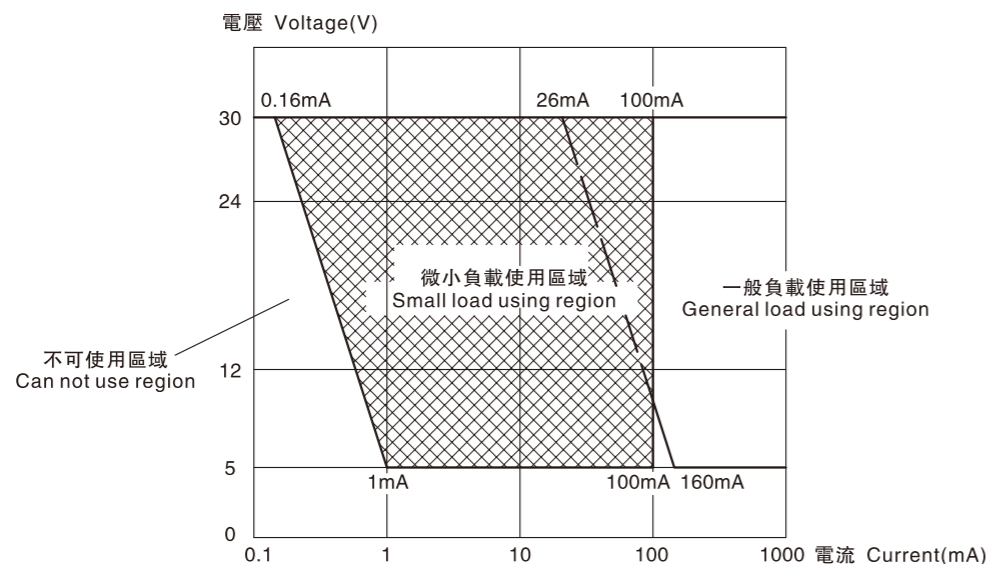
## ■ 關於微小負載電路中的使用 Concerning use in small load circuit

如果在開關微小負載電路中使用一般負載用開關，可能會引起接觸不良。

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

請參考下圖在使用區域的範圍內使用開關，並根據需要插入觸點保護電路。

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



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

DONGNAN provide you professional micro switch solutions.

## 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 gap, quick action, high sensitivity and small operating travel.

■ 長壽命，高可靠。  
Long life, high reliability.

■ 接線端子種類齊全  
A variety of contact terminals

■ 配備各種形式動臂  
A variety of levers

■ 廣泛應用於各種家用電器、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	0.1 mm ~ 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) 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
	帶電金屬零件與地(外殼)之間、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm雙振幅 Double amplitude
抗衝擊 Shock resistance	破壞: 動作力>0.5N: 1000m/s <sup>2</sup> (約100G)max 動作力≤0.5N: 500m/s <sup>2</sup> (約50G)max 故障: 動作力>0.5N: 300m/s <sup>2</sup> (約30G)max 動作力≤0.5N: 200m/s <sup>2</sup> (約20G)max Destruction: OF>0.5N: 1000m/s <sup>2</sup> (approx.100G)max OF≤0.5N: 500m/s <sup>2</sup> (approx.50G)max Malfunction: OF>0.5N: 300m/s <sup>2</sup> (approx.30G)max OF≤0.5N: 200m/s <sup>2</sup> (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：指無動臂時按紐上的動作力。 Note: Refers to the operating force of no lever.

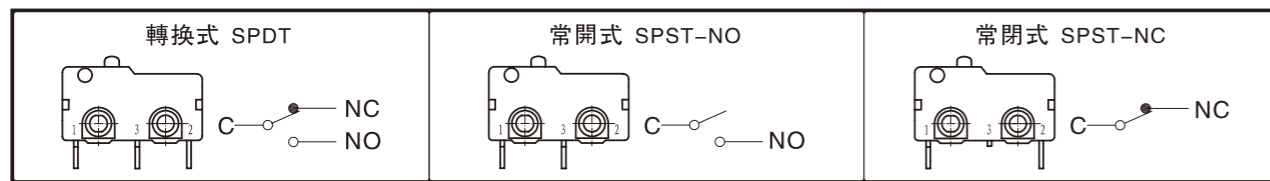
提供安全、可靠的通斷服務，讓電器更完美

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

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

<b>1</b> 溫度等級 Degrees of temperature	無標記 No mark: 10T85 T125	<b>5</b> 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
<b>2</b> 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	<b>6</b> 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.
<b>3</b> 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)	<b>7</b> 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 (見說明圖 see illustration) 注: 若採用本表中未列入的非標準按鈕, 則用此新增按鈕的規格代號(本公司確認)表示。 Note: if adopt other not standard plunger, then indicate with the new spec (confirmed by our company).
<b>4</b> 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.	<b>8</b> 附加規格編號 適用於: Additional spec numbers, apply to:	1) 當開關使用了非標準零件如非標準端子時; When used not standard parts such as not 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, 在沒有附加規格編號時, 該位置空缺。 Additional specs number shows by Arabic numerals. If there is no additional numbers, the place is vacant.

◆ 接觸形式說明圖 Circuit illustration

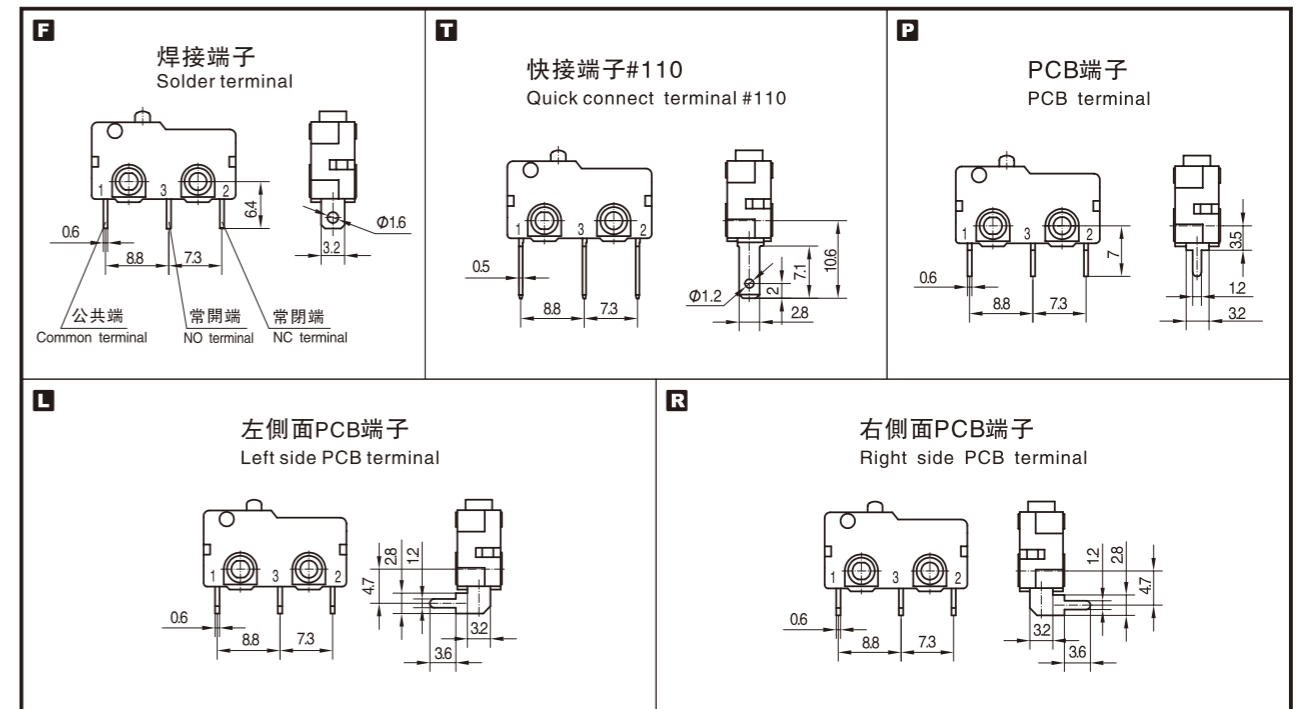


◆ 按鈕規格說明圖 Plunger spec illustration

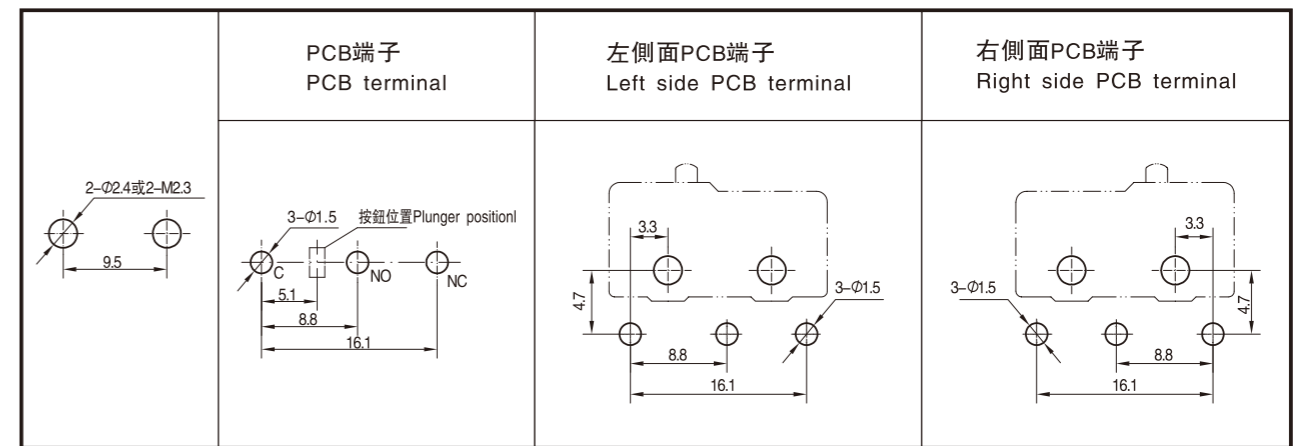
按鈕標記 Mark on plunger	無標記 No mark	A	D
按鈕尺寸 Plunger dimension	1.5	1.3	3.9

DONGNAN provide you professional micro switch solutions.

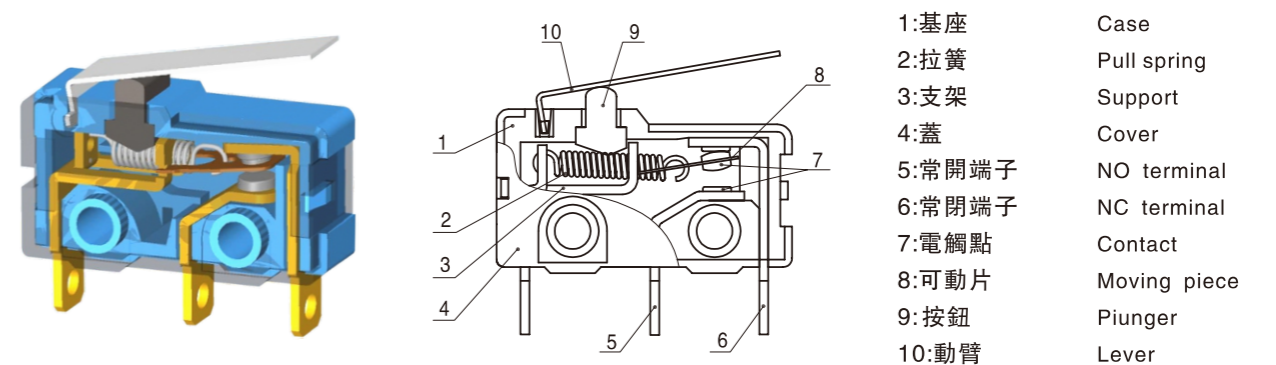
◆ 接線端尺寸 Terminal dimensions



◆ 安裝孔尺寸 Mounting hole dimension

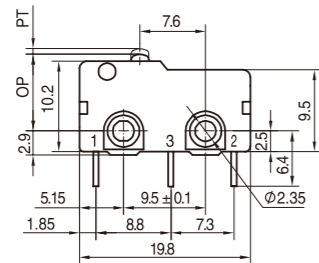
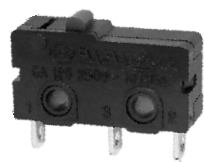


◆ 內部構造圖 Internal configuration drawing



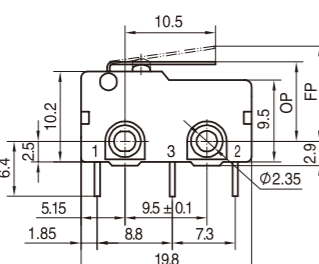
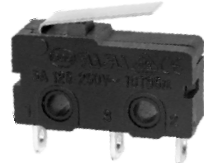
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

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



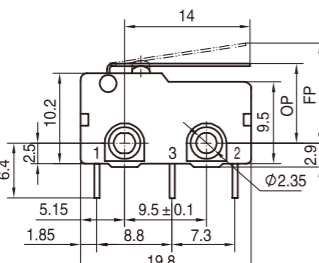
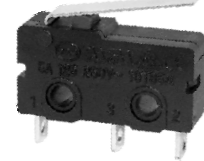
型號 Model	KW4A(S)-Z0F100	KW4A(S)-Z0F150	KW4A(S)-Z0F200	KW4A(S)-Z0F300
OF Max(N)	1.00	1.50	2.00	3.00
RF Min(N)	0.15	0.30	0.50	0.70
PT Max(mm)	0.8			
OT Min(mm)	0.5			
MD Max(mm)	0.2			
OP(mm)	8.6±0.4			

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



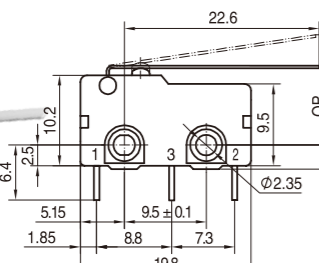
型號 Model	KW4A(S)-Z1F100	KW4A(S)-Z1F150	KW4A(S)-Z1F200	KW4A(S)-Z1F300
OF Max(N)	0.35	0.55	0.75	1.00
RF Min(N)	0.10	0.15	0.20	0.30
OT Min(mm)	1.0			
MD Max(mm)	0.6			
FP Max(mm)	11.5			
OP(mm)	9±0.8			

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



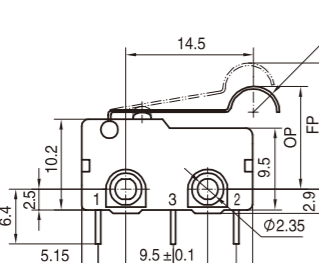
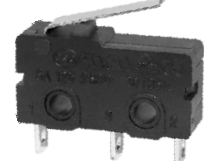
型號 Model	KW4A(S)-Z3F100	KW4A(S)-Z3F150	KW4A(S)-Z3F200	KW4A(S)-Z3F300
OF Max(N)	0.25	0.40	0.50	0.80
RF Min(N)	0.04	0.08	0.15	0.20
OT Min(mm)	0.8			
MD Max(mm)	0.8			
FP Max(mm)	12.5			
OP(mm)	8.9±1			

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			

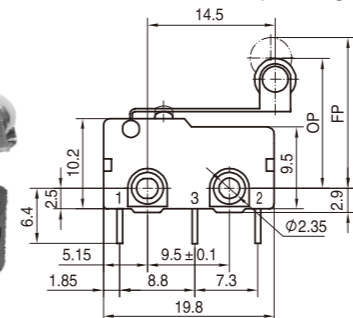
KW4A(S)-Z6F100  
KW4A(S)-Z6F150  
KW4A(S)-Z6F200  
KW4A(S)-Z6F300



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			

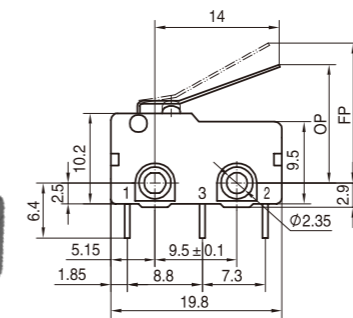
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

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



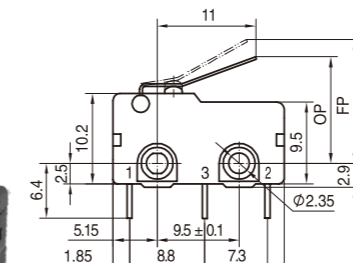
型號 Model	KW4A(S)-Z5F100	KW4A(S)-Z5F150	KW4A(S)-Z5F200	KW4A(S)-Z5F300
OF Max(N)	0.25	0.40	0.50	0.80
RF Min(N)	0.04	0.08	0.15	0.20
OT Min(mm)	1.2			
MD Max(mm)	0.9			
FP Max(mm)	19.0			
OP(mm)	15.2±1			

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



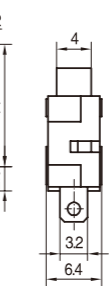
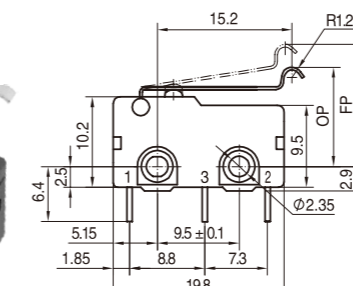
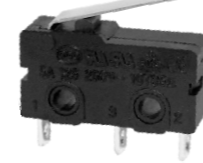
型號 Model	KW4A(S)-ZEF100	KW4A(S)-ZEF150	KW4A(S)-ZEF200	KW4A(S)-ZEF300
OF Max(N)	0.25	0.40	0.50	0.80
RF Min(N)	0.04	0.08	0.15	0.20
OT Min(mm)	1.2			
MD Max(mm)	0.8			
FP Max(mm)	16.5			
OP(mm)	13±1			

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



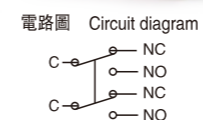
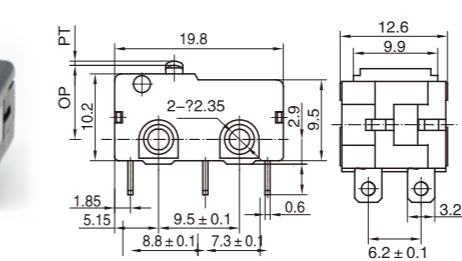
型號 Model	KW4A(S)-ZQF100	KW4A(S)-ZQF150	KW4A(S)-ZQF200	KW4A(S)-ZQF300
OF Max(N)	0.32	0.50	0.65	1.00
RF Min(N)	0.04	0.08	0.15	0.20
OT Min(mm)	1.0			
MD Max(mm)	0.8			
FP Max(mm)	15.0			
OP(mm)	12.2±0.8			

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			

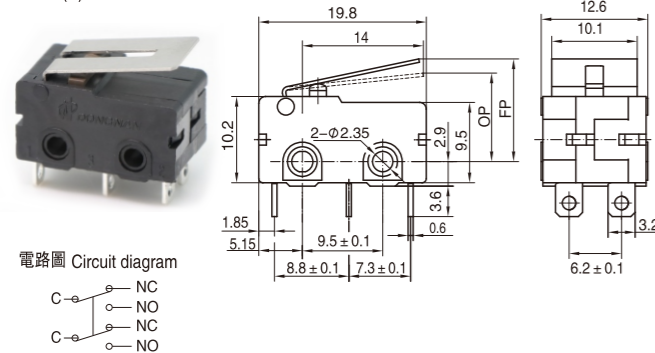
KW4A(S)雙聯開關 Double switch  
KW4A(S)-Z0F200-22



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

◆ 可供選擇的非標準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	外形特征尺寸 Outline characteristic dimensions	動臂代號 Lever code	外形特征尺寸 Outline characteristic dimensions	動臂代號 Lever code	外形特征尺寸 Outline characteristic dimensions
3A		C		K	
N		G		Q1	
J		F1		S1	
J1		6A		5A	
J2		6C			

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請正確使用 Please use it correctly

【共通注意事項】請參閱相關頁

【Common use】please refer to related pages

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

(1) 將導線焊接到端子上時，請先將導線穿過端子孔後再進行焊接。

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

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

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

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

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

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

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

■ 關於絕緣距離 Concerning insulation distance

根據IEC 61058-1/EN 61058-1/GB 15092.1之規定，本開關的最小絕緣層厚度為1.1mm，端子和安裝板之間的最小空間距離為1.6mm。如果無法確保零件所要求的絕緣距離，請使用絕緣護罩或隔板來保證絕緣距離。

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

■ 關於安裝 Concerning installation

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

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

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

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

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

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

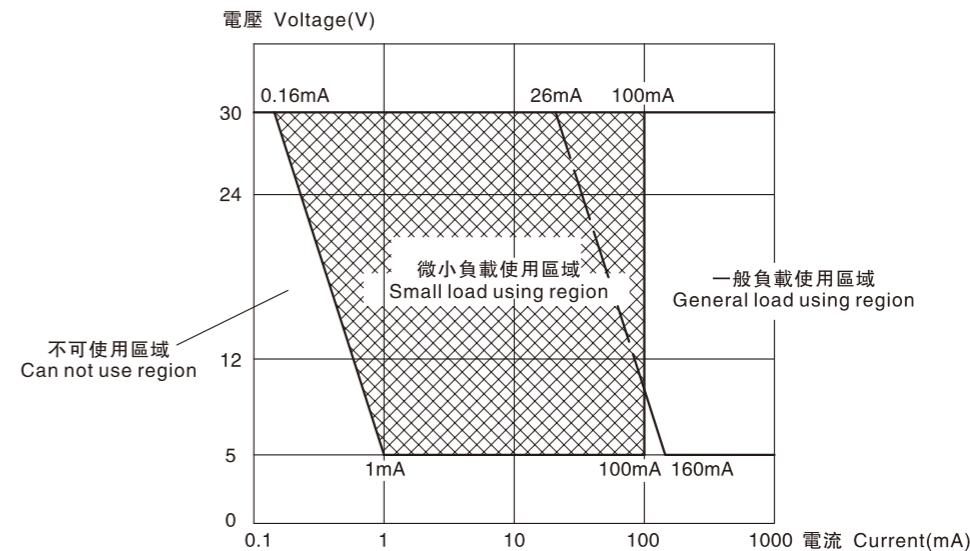
■ 關於微小負載電路中的使用 Concerning use in small load circuit

如果在開關微小負載電路中使用一般負載用開關，可能會引起接觸不良。

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

請參考下圖在使用區域的範圍內使用開關，並根據需要插入觸點保護電路。

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





## KW4B型微動開關系列 Micro switch series

### ◆ 特點和用途 Characteristic and usage

#### ■ 多種接線端子型式

A variety of contact terminals

#### ■ 廣泛應用於家用電器、電子設備、自動化設備及類似設備。

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



### ◆ 技術特性 Specifications

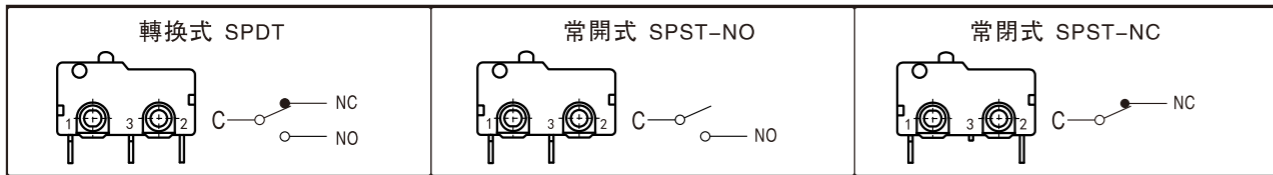
項目 Item		特性值 Value
工作速度 Operating speed		0.1mm ~ 1m/s(與驅動方式有關) ( Related with actuator forms)
工作頻率 Operating Frequency		機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; electrical 25cycles/min
絕緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		動作力 > 0.5N: ≤30mΩ (見注) 動作力 ≤ 0.5N: ≤50mΩ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

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

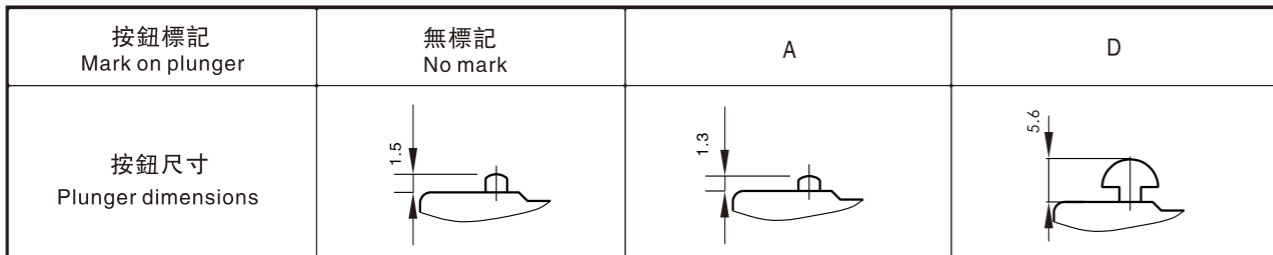
KW4B □ - □ □ □ □ □ □ - ( □ )  
1 2 3 4 5 6 7 8

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

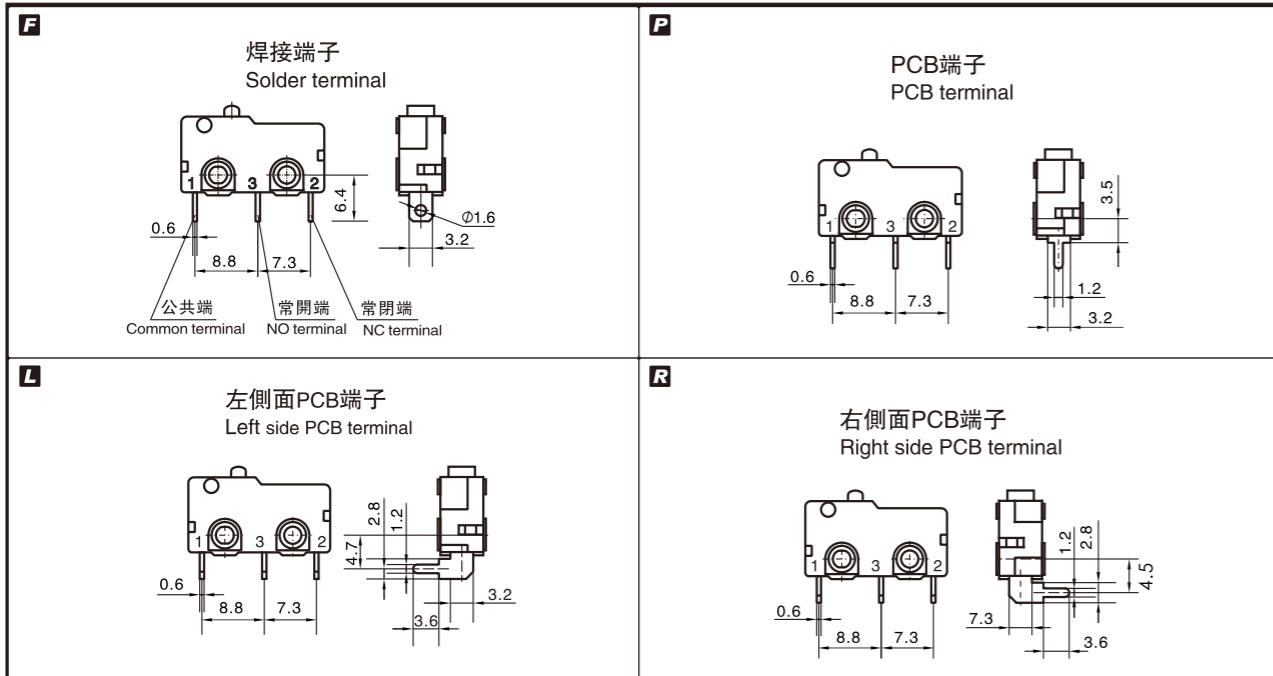
◆ 接觸形式說明圖 Circuit illustration



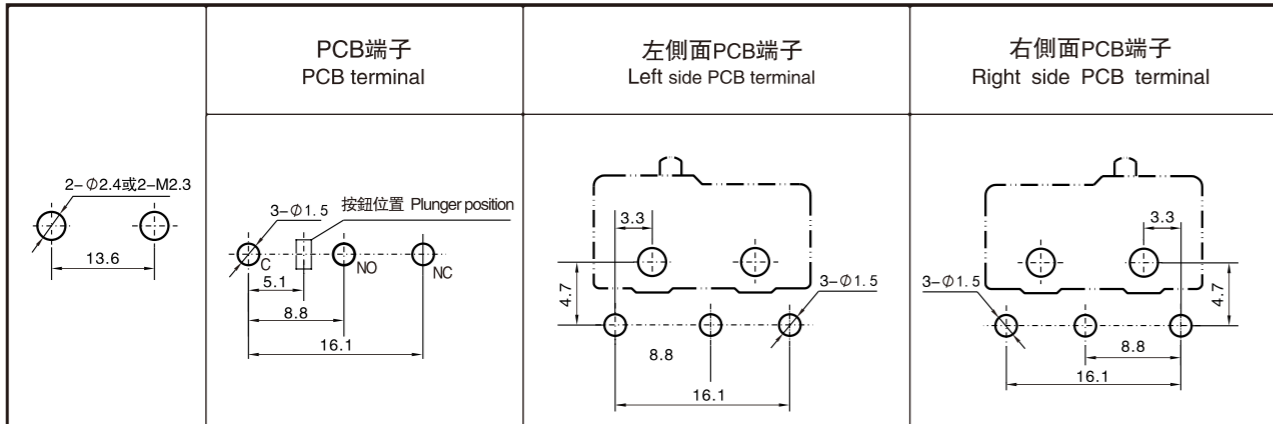
◆ 按鈕規格說明圖 Plunger spec illustration



◆ 接線端尺寸 Terminal dimensions

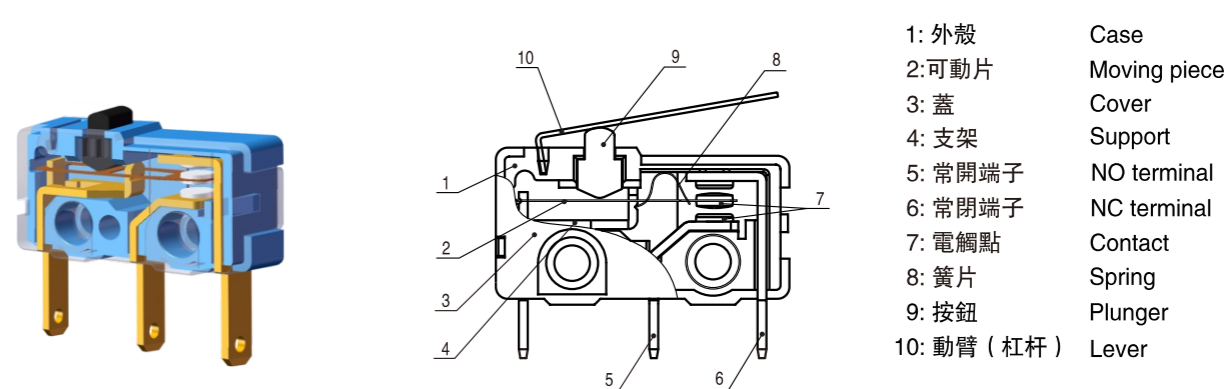


◆ 安裝孔尺寸 Mounting hole dimensions



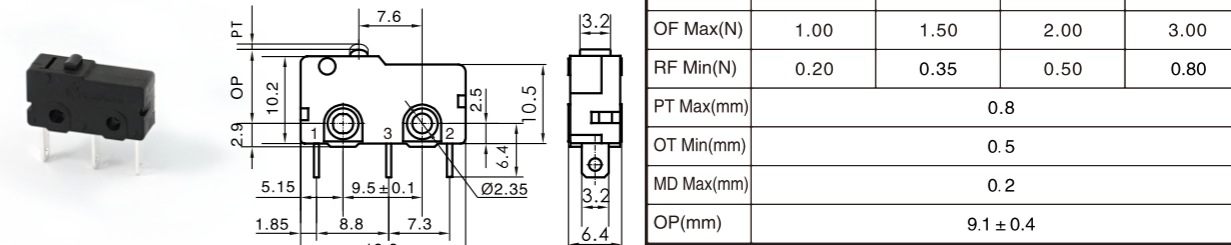
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◆ 內部構造圖 Internal configuration drawing

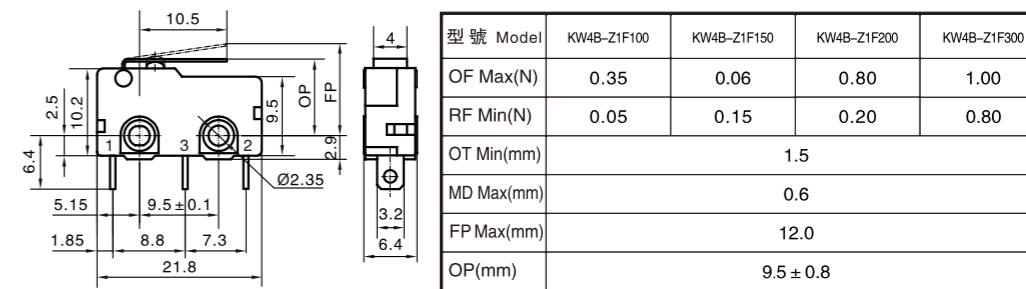


◆ 外形尺寸和動作特性 Dimensions and operating characteristics

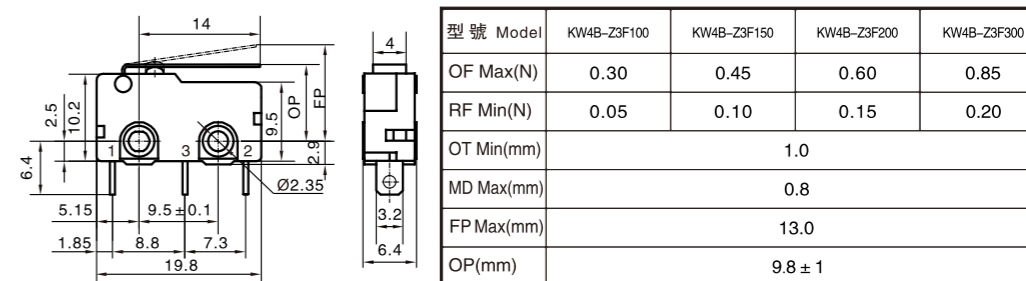
KW4B-Z0F100  
KW4B-Z0F150  
KW4B-Z0F200  
KW4B-Z0F300



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

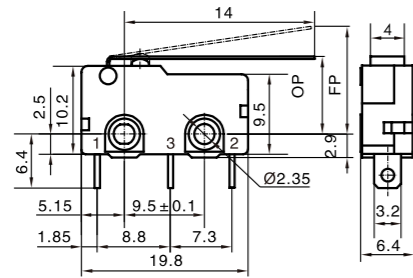


KW4B-Z3F100  
KW4B-Z3F150  
KW4B-Z3F200  
KW4B-Z3F300



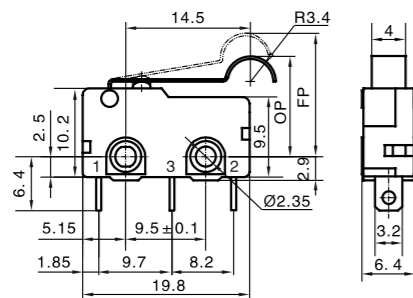
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

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



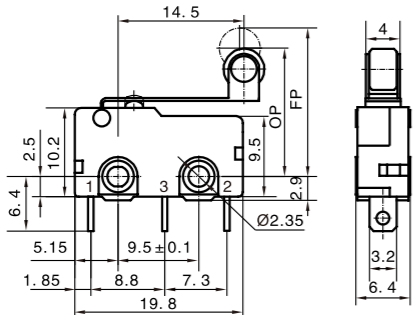
型號 Model	KW4B-Z2F100	KW4B-Z2F150	KW4B-Z2F200	KW4B-Z2F300
OF Max(N)	0.20	0.30	0.40	0.60
RF Min(N)	0.03	0.08	0.10	0.18
OT Min(mm)	2.0			
MD Max(mm)	1.5			
FP Max(mm)	16.0			
OP(mm)	10 ± 1.5			

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



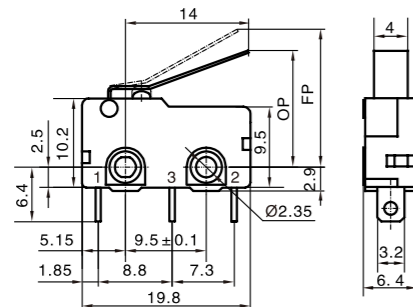
型號 Model	KW4B-Z6F100	KW4B-Z6F150	KW4B-Z6F200	KW4B-Z6F300
OF Max(N)	0.30	0.45	0.60	0.85
RF Min(N)	0.05	0.10	0.15	0.20
OT Min(mm)	1.2			
MD Max(mm)	0.8			
FP Max(mm)	17.5			
OP(mm)	14.5 ± 1			

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



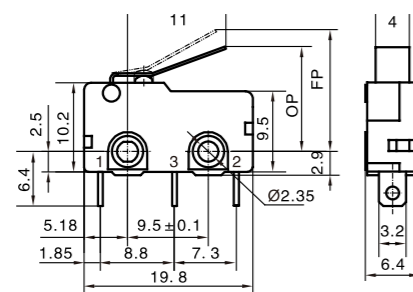
型號 Model	KW4B-Z5F100	KW4B-Z5F150	KW4B-Z5F200	KW4B-Z5F300
OF Max(N)	0.30	0.45	0.60	0.85
RF Min(N)	0.05	0.10	0.15	0.20
OT Min(mm)	1.2			
MD Max(mm)	0.8			
FP Max(mm)	19.0			
OP(mm)	16.2 ± 1			

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



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

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

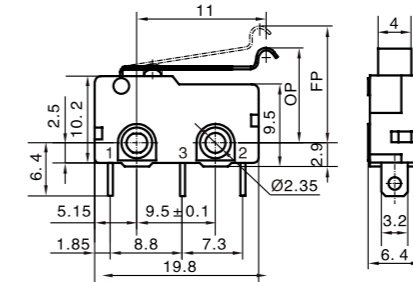


型號 Model	KW4B-ZQF100	KW4B-ZQF150	KW4B-ZQF200	KW4B-ZQF300
OF Max(N)	0.32	0.50	0.65	1.00
RF Min(N)	0.05	0.10	0.15	0.20
OT Min(mm)	1.2			
MD Max(mm)	0.8			
FP Max(mm)	15.5			
OP(mm)	13.2 ± 1			

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

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



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

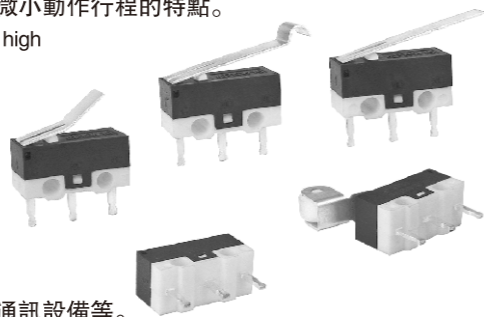
◆ 可供選擇的非標準動臂代號和外形特徵尺寸 Not standard levers for choose and outline characteristic dimension

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

**KW10型微動開關系列 Micro switch series**

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

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



◆ **技術特性** Technical Characteristics

項目 Item	特性值 Value
工作速度 Operating speed	1mm ~ 500mm/s (與驅動方式有關)(Related with actuator forms)
工作頻率 Operating frequency	機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; Electrical 25cycles/min
絕緣電阻 Insulation resistance	≥ 100MΩ (500VDC)
接觸電阻 Contact resistance	動作力>0.75N: ≤50mΩ (見注) 動作力≤0.75N : ≤100mΩ (見注) OF>0.75N: ≤30mΩ (see note) OF≤0.75N: ≤50mΩ (see note) KW10-D、E、F型: ≤100mΩ (見注) KW10-D、E、Ftype: ≤100mΩ (seende)
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity AC600V,50/60Hz, 1min
	帶電金屬零件與地(外殼)之間、 接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts. AC1000V,50/60Hz, 1min
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm 雙振幅 Double amplitude
抗衝擊 Shock resistance	故障: 300m/s <sup>2</sup> (約30G)max Malfunction:300m/s <sup>2</sup> (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.

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

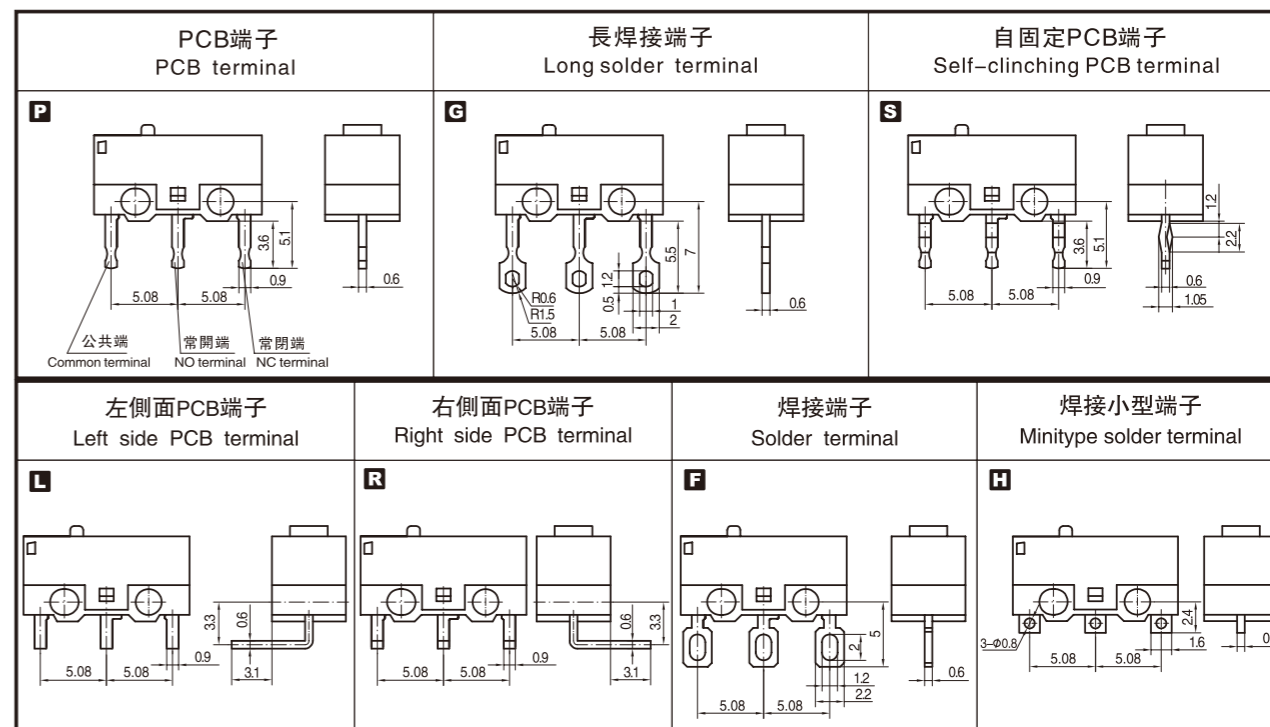
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◆ **型號規格命名及含義** Model number legend and meanings

KW10 - □□□□□ - (□)  
1 2 3 4 5 6

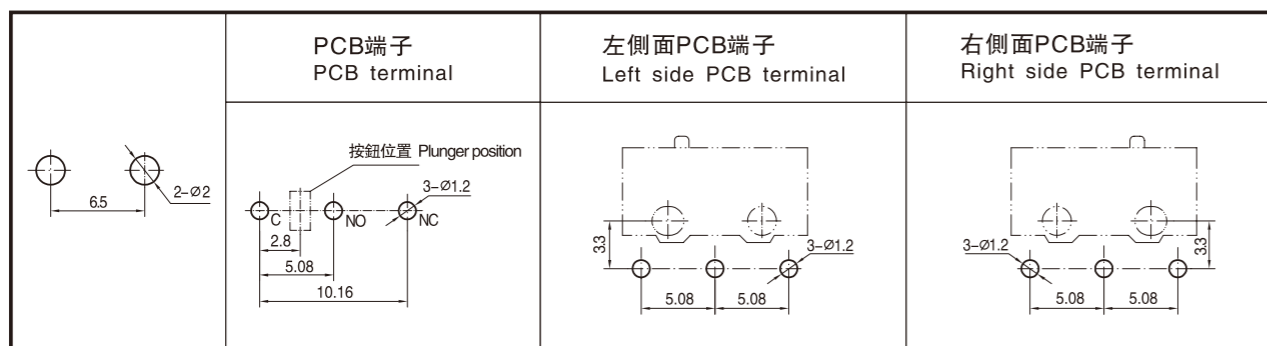
<b>1</b> 額定值 Ratings	無標記 No mark: 3(0.5)A125/250VAC,3(1)A125/250VAC 3GPA125/250VAC 3RA125/250VAC, 3A30VDC KW10-C: 1A125VAC, 1(0.5)A125/250VAC 1GPA125/250VAC 1RA125/250VAC, 1A30VDC KW10-D: 0.5A125VAC, 0.5(0.2)A125/250VAC 0.5GPA125/250VAC 0.5RA125/250VAC, 0.5A30VDC KW10-E: 0.3A125VAC, 0.3(0.1)A125/250VAC 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	<b>3</b> 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,
<b>2</b> 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	<b>4</b> 端子類型 Terminal types	F: 焊接端子 Solder terminal G: 長焊接端子 Long solder terminal P: PCB端子 PCB terminal L: 左側面PCB端子 Left side PCB terminal R: 右側面PCB端子 Right side PCB terminal S: 自固定PCB端子 Self-clinching PCB terminal H: 焊接小型端子 Minitype solder terminal Y: 非標準端子 Not standard terminal
<b>3</b> 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	<b>5</b> 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.
<b>6</b> 附加規格編號, 適用於: Additional spec numbers, Apply to:		1)當開關使用了非標準零件如非標準端子等時; When used not standard parts such as not standard terminal; 2)當顧客有特殊動作特性值或其它要求時。 When customer has particular operating value or other requirements. 附加規格編號用阿拉伯數字表示, 在沒有附加規格編號時, 該位置空缺。 Additional specs number shows by Arabic numerals. If there is no additional numbers, the place is vacant.	

◆ **接線端尺寸** Terminal dimensions

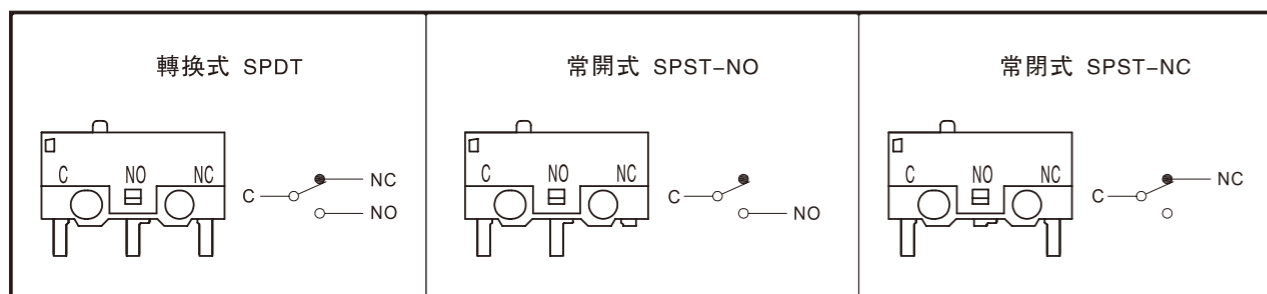


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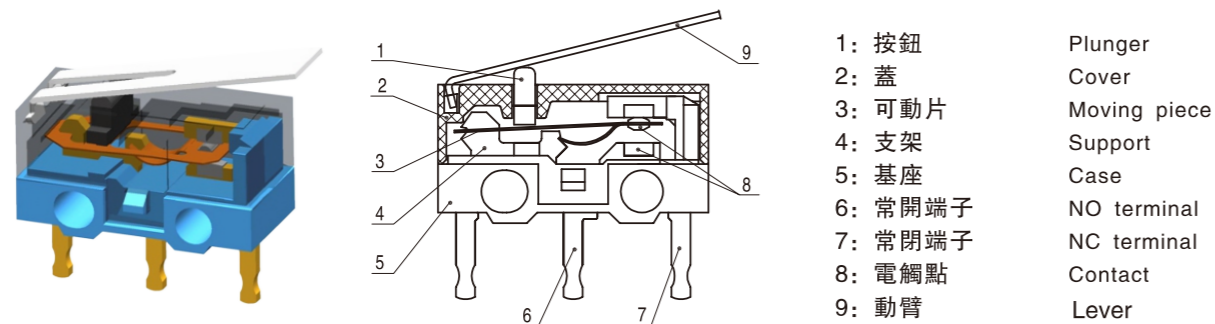
◆ 安裝孔尺寸 Mounting hole dimensions



◆ 接觸形式說明圖 Circuit illustration

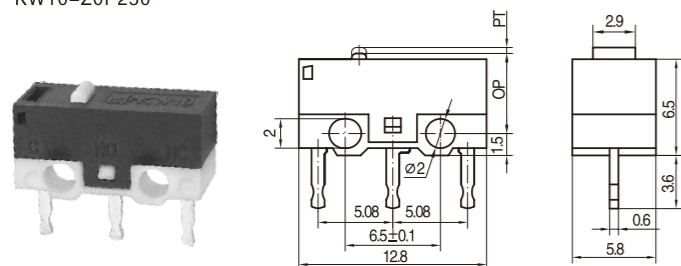


◆ 內部構造圖 Internal configuration drawing



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

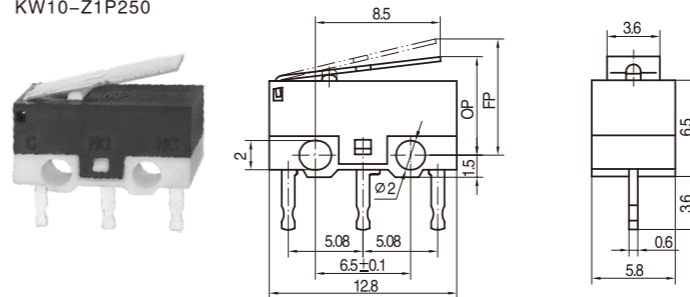
KW10-Z0P075  
KW10-Z0P150  
KW10-Z0P250



型號 Model	KW10-Z0P075	KW10-Z0P150	KW10-Z0P250
OF Max(N)	0.75	1.50	2.50
RF Min(N)	0.05	0.08	0.40
PT Max(mm)	0.5		
OT Min(mm)	0.2		
MD Max(mm)	0.2		
OP(mm)	5.5 ± 0.3		

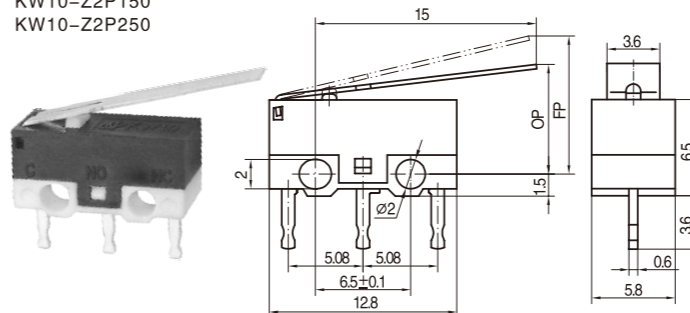
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

KW10-Z1P075  
KW10-Z1P150  
KW10-Z1P250



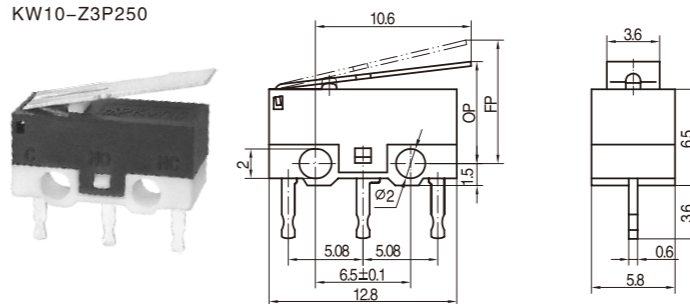
型號 Model	KW10-Z1P075	KW10-Z1P150	KW10-Z1P250
OF Max(N)	0.26	0.53	0.90
RF Min(N)	0.04	0.08	0.15
OT Min(mm)	0.6		
MD Max(mm)	0.6		
FP Max(mm)	9.0		
OP(mm)	6.7 ± 1		

KW10-Z2P075  
KW10-Z2P150  
KW10-Z2P250



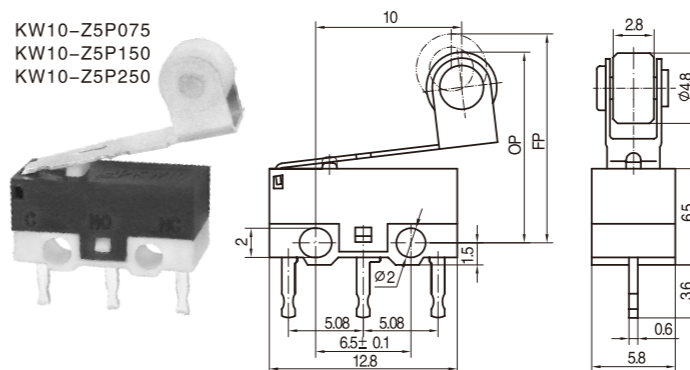
型號 Model	KW10-Z2P075	KW10-Z2P150	KW10-Z2P250
OF Max(N)	0.17	0.33	0.55
RF Min(N)	0.02	0.04	0.08
OT Min(mm)	1.0		
MD Max(mm)	1.0		
FP Max(mm)	10.0		
OP(mm)	7.6 ± 1.5		

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		

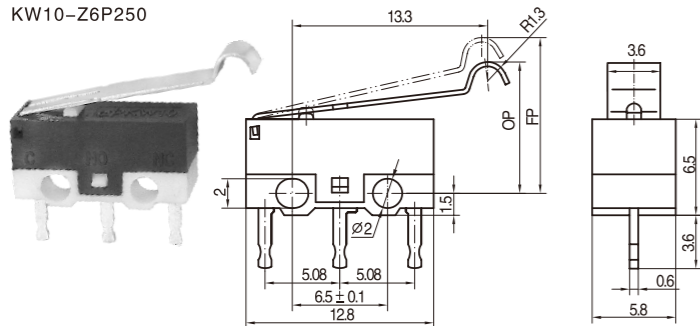
KW10-Z5P075  
KW10-Z5P150  
KW10-Z5P250



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		

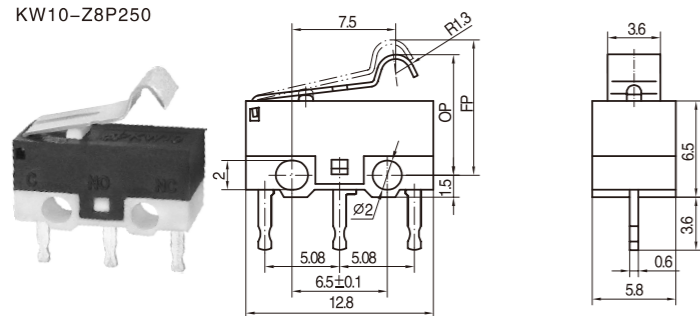
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

KW10-Z6P075  
KW10-Z6P150  
KW10-Z6P250



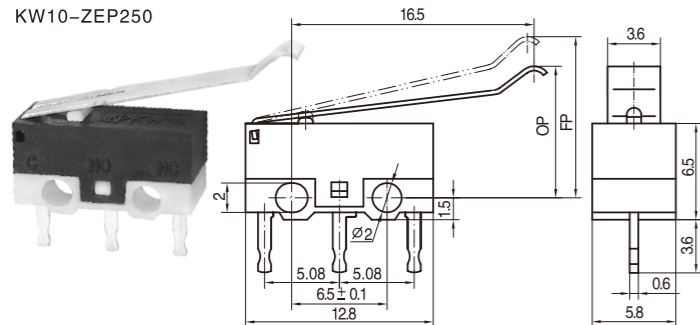
型號 Model	KW10-Z6P075	KW10-Z6P150	KW10-Z6P250
OF Max(N)	0.18	0.36	0.60
RF Min(N)	0.02	0.05	0.10
OT Min(mm)	0.9		
MD Max(mm)	0.9		
FP Max(mm)	11.5		
OP(mm)	8.6 ± 1		

KW10-Z8P075  
KW10-Z8P150  
KW10-Z8P250



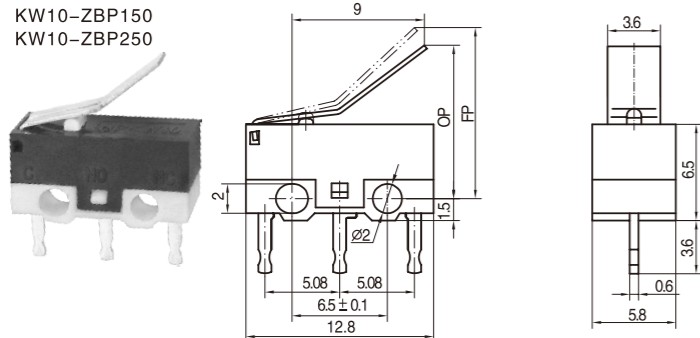
型號 Model	KW10-Z8P075	KW10-Z8P150	KW10-Z8P250
OF Max(N)	0.30	0.60	1.00
RF Min(N)	0.03	0.06	0.12
OT Min(mm)	0.6		
MD Max(mm)	0.6		
FP Max(mm)	10.5		
OP(mm)	8.6 ± 1		

KW10-ZEP075  
KW10-ZEP150  
KW10-ZEP250



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

KW10-ZBP075  
KW10-ZBP150  
KW10-ZBP250



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

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

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

## ◆ 請正確使用 Please use it correctly

【共通注意事項】請參閱相關頁

【Common use】please refer to related pages

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

(1) 將導線焊接到端子上時，請先將導線穿過端子孔後再進行焊接。

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

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

The iron capacity should be below 30W, soldering iron temperature at about 300℃(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。因為如果采用焊槽焊接，焊錫可能進入開關內部而導致接觸不良。

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

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

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

## ■ 關於安裝 Concerning installation

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

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

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

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

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

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

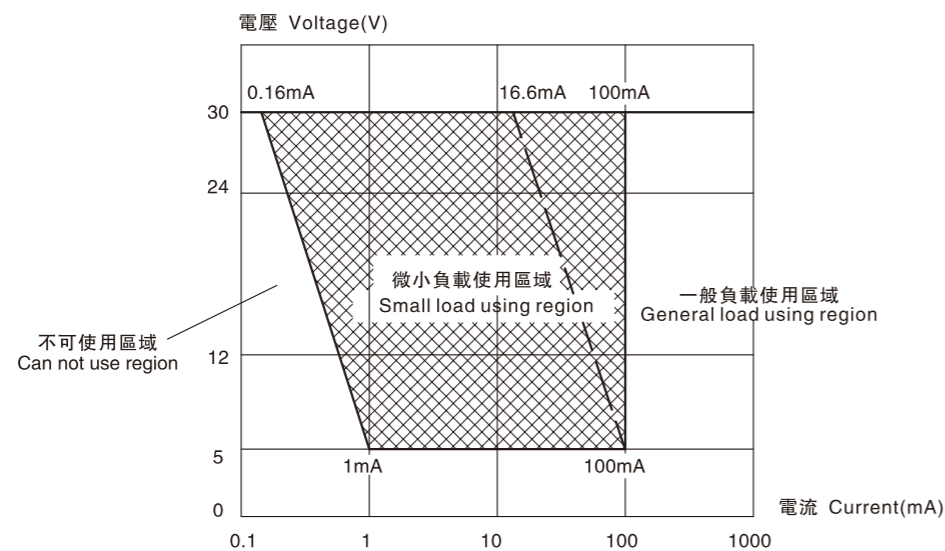
## ■ 關於微小負載電路中的使用 Concerning use in small load circuit

如果在開關微小負載電路中使用一般負載用開關，可能會引起接觸不良。

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

請參考下圖在使用區域的範圍內使用開關，並根據需要插入觸點保護電路。

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



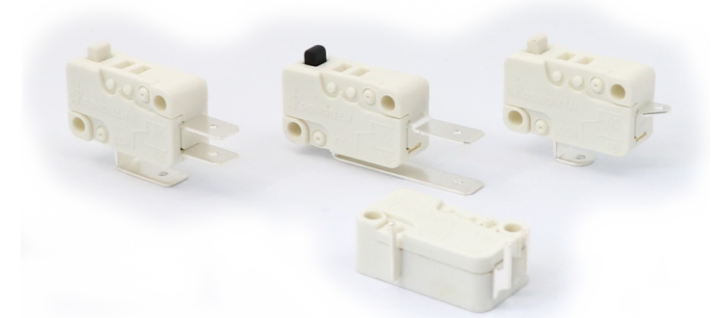
To provide a safe and reliable on-off service, let electric appliances more perfect

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## MS1型微動開關系列 Micro switch series

## ◆ 品質優良的微動開關 Good quality micro switch

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



## ◆ 技術特性 Technical Characteristics

項目 Item	特性值 Value
工作速度 Operating speed	0.1mm ~ 1m/s (與驅動方式有關) (Related with actuator forms)
工作頻率 Operating frequency	機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; Electrical 25 cycles/min
絕緣電阻 Insulation resistance	≥ 100MΩ (500VDC)
接觸電阻 Contact resistance	動作力 > 0.75N: ≤ 50mΩ (見注) 動作力 ≤ 0.75N: ≤ 100mΩ (見注) OF > 0.75N: ≤ 50mΩ (see note) OF ≤ 0.75N: ≤ 100mΩ (see note)
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity
	帶電金屬零件與地(外殼)之間、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm雙振幅 Double amplitude
抗衝擊 Shock resistance	破壞: 動作力 > 0.5N: 1000m/s <sup>2</sup> (約100G) max 動作力 ≤ 0.5N: 400m/s <sup>2</sup> (約40G) max 故障: 動作力 > 0.5N: 200m/s <sup>2</sup> (約20G) max 動作力 ≤ 0.5N: 100m/s <sup>2</sup> (約10G) max Destruction: OF > 0.5N: 1000m/s <sup>2</sup> (approx. 100G) max OF ≤ 0.5N: 400m/s <sup>2</sup> (approx. 40G) max Malfunction: OF > 0.5N: 200m/s <sup>2</sup> (approx. 20G) max OF ≤ 0.5N: 100m/s <sup>2</sup> (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.

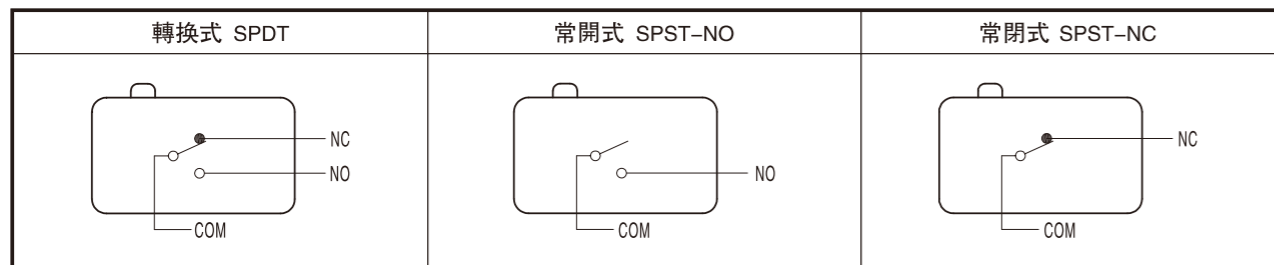
提供安全、可靠的通斷服務，讓電器更完美

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

MS1 □-□□□-□□□-(□)  
1 2 3 4 5 6 7 8

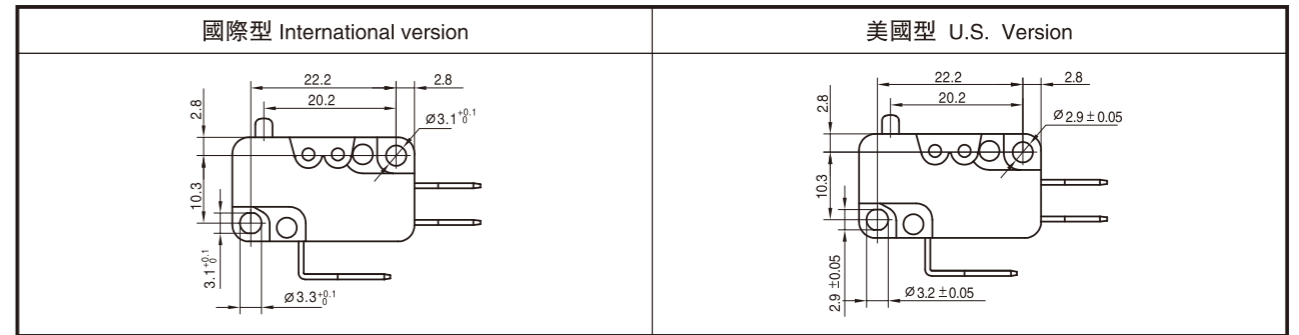
<b>1</b> 溫度等級 Degrees of temperature	無標記: 10T125 No mark	A: 250快接端子之一 250 quick-connect terminal No.1 B: 250快接端子之二 250 quick-connect terminal No.2 C: 250快接端子之三 250 quick-connect terminal No.3 K: 250快接端子之四 250 quick-connect terminal No.4 D: 187快接端子(厚0.5mm) 187 quick-connect terminal(thick 0.5mm) E: 187快接端子(厚0.8mm) 187 quick-connect terminal (thick 0.8mm) F: 焊接端子 Solder terminal G: 螺孔端子 Screw terminal H: 端面PCB端子 Upper PCB terminal J: 底面PCB端子 Bottom PCB terminal L: 左側面PCB端子 Left side PCB terminal R: 右側面PCB端子 Right side PCB terminal Y: 非標準端子 Not standard terminal
<b>2</b> 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	<b>5</b> 端子類型 Terminal types
<b>3</b> 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)	<b>6</b> 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
<b>4</b> 驅動形式 Actuator forms	0: 無動臂 No lever A1/1: 短動臂 Short lever A2/2: 長動臂 Long lever A3/3: 中動臂 Middle lever A4/4: 短滾輪臂 Short roller A5/5: 長滾輪臂 Long roller A6/6: 弧形動臂 Arc lever A□/□: 非標準動臂 Not standard lever 注: 1)A 表示動臂安裝在靠近按鈕位置, 無字母A表示動臂安裝在離按鈕較遠位置。 2)□ 表示非標準動臂的代號。 3)若動臂為內安裝式, 則在動臂代號後加字母N。 Note: 1)A indicate the lever near to the plunger, no A indicate the lever far away from the plunger. 2)□ indicate not standard lever. 3)If lever is mounted inside.add letter "N" after the lever code.	<b>7</b> 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.
		<b>8</b> 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

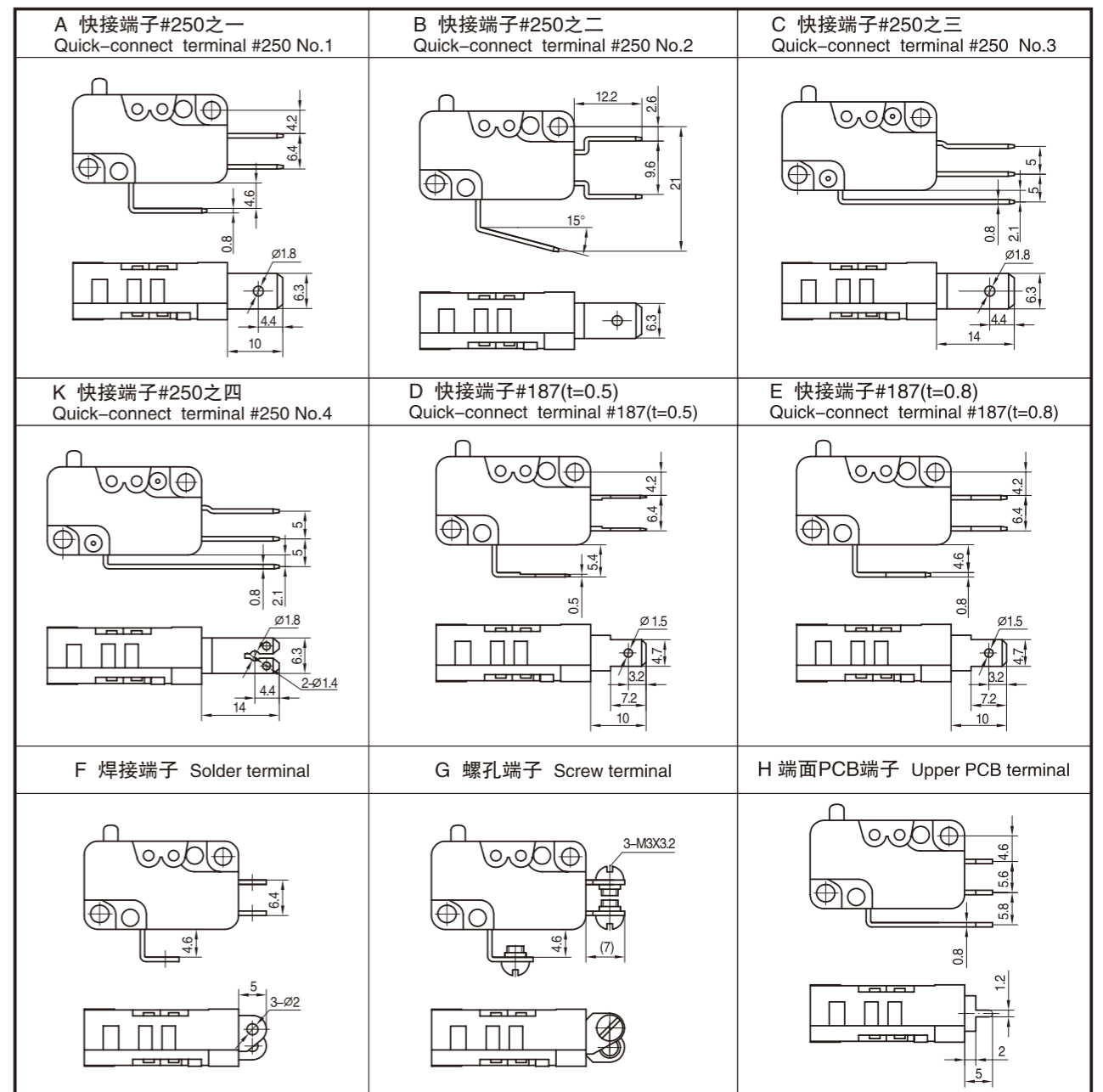


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◆ 安裝孔特徵說明圖 Mounting hole characteristic illustration

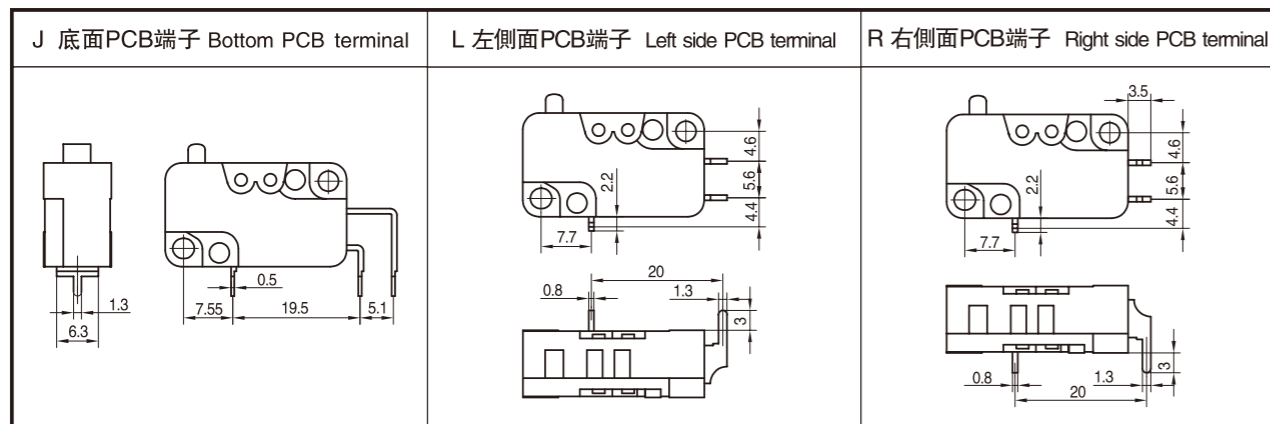


◆ 接線端配置及尺寸 Connect terminals collocation and dimensions

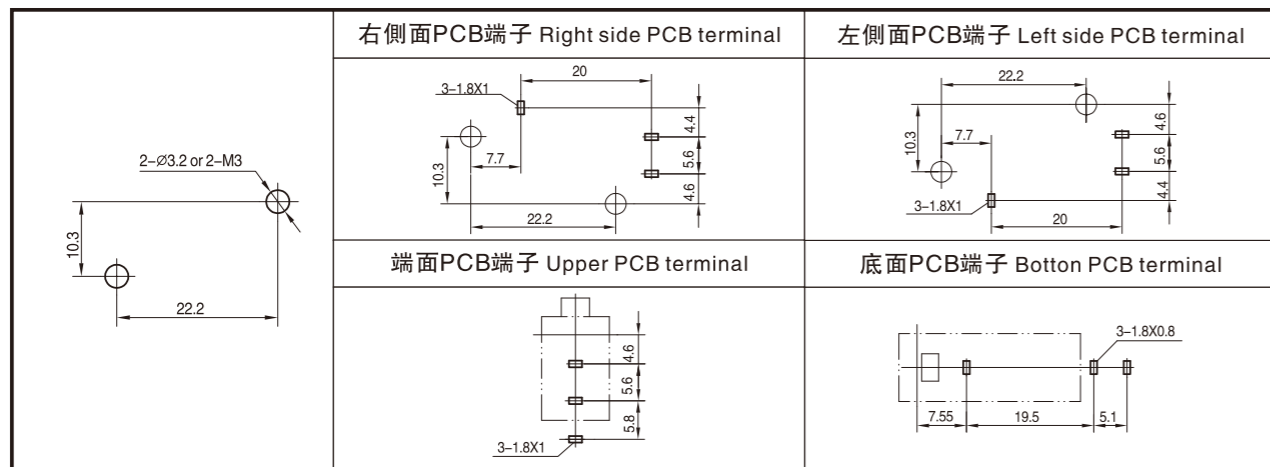




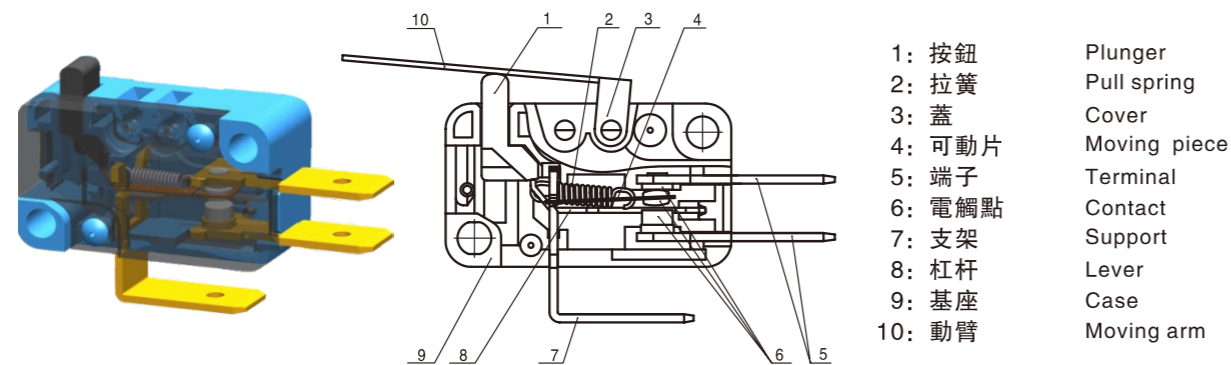
◆ 接線端配置及尺寸 Connect terminals collocation and dimensions



◆ 安裝孔尺寸 Mounting hole dimensions



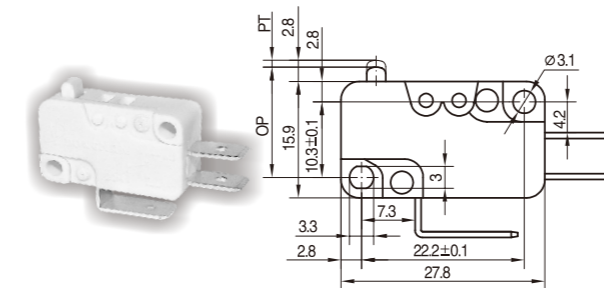
◆ 內部構造圖 Internal configuration drawing



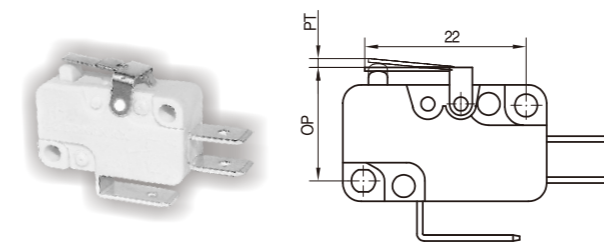
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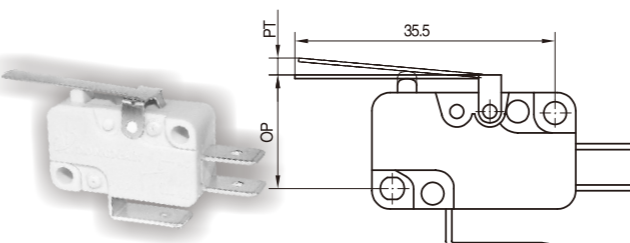
◆ 外形尺寸和動作特性 Dimensions and operating characteristics



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



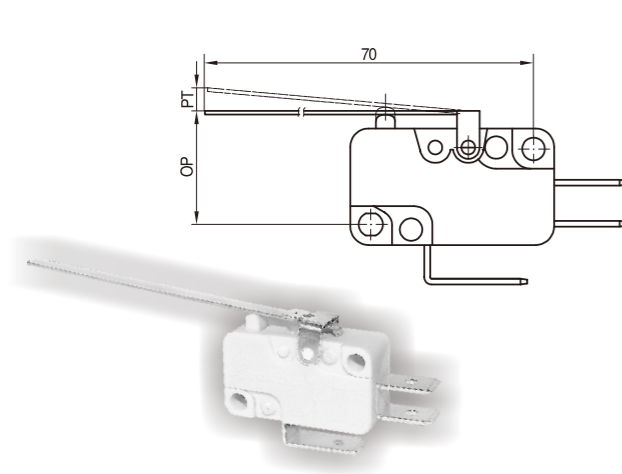
型號 Model	OF Max(N)	PT Max(mm)	OT Min(mm)	MD Max(mm)	OP (mm)
MS1-01Z1-A075	0.75				
MS1-03Z1-A075	0.75				
MS1-06Z1-A170	1.70				
MS1-10Z1-A285	2.85				
MS1-16Z1-A400	4.00				
MS1-01Z1-A015	0.15	1.6	1.3	0.4	14.7-15.8
MS1-03Z1-A015	0.15				
MS1-06Z1-A045	0.45				
MS1-10Z1-A075	0.75				
MS1-16Z1-A100	1.00				



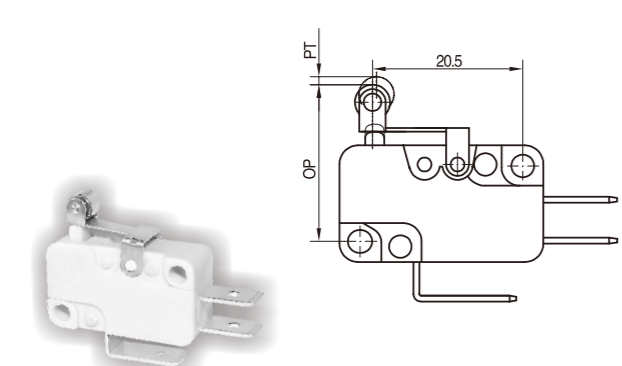
型號 Model	OF Max(N)	PT Max(mm)	OT Min(mm)	MD Max(mm)	OP (mm)
MS1-01Z3-A075	0.35				
MS1-03Z3-A075	0.35				
MS1-06Z3-A170	0.86				
MS1-10Z3-A285	1.44				
MS1-16Z3-A400	2.00				
MS1-01Z3-A015	0.08	3.2	2.2	0.8	14.1-16.4
MS1-03Z3-A015	0.08				
MS1-06Z3-A045	0.22				
MS1-10Z3-A075	0.37				
MS1-16Z3-A100	0.50				

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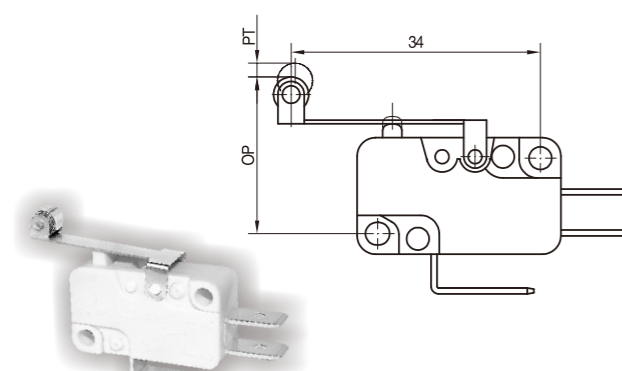
## ◆ 外形尺寸和動作特性 Dimensions and operating characteristics



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



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

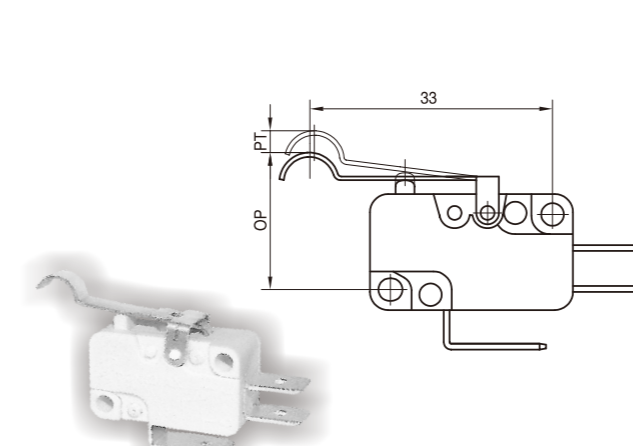


型號 Model	OF Max(N)	PT Max(mm)	OT Min(mm)	MD Max(mm)	OP (mm)
MS1-01Z5-A075	0.35	3.2	2.2	0.8	19.3-21.6
MS1-03Z5-A075	0.35				
MS1-06Z5-A170	0.86				
MS1-10Z5-A285	1.44				
MS1-16Z5-A400	2.00				
MS1-01Z5-A015	0.08				
MS1-03Z5-A015	0.08				
MS1-06Z5-A045	0.22				
MS1-10Z5-A075	0.37				
MS1-16Z5-A100	0.50				

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



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

## ◆ 請正確使用 Please use it correctly

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

## ■ 關於使用 Concerning the using

(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) 對於低荷重型開關，由於其構造特殊，請注意不要讓開關跌落，以免損壞內部結構。

About the low operating force switches, please do not drop the switch so as to avoid damage to inside structure, because it is of special structure.

## ■ 關於安裝 Concerning the installation

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

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

(2) 安裝時，使用2個M3螺釘，用平墊圈、彈簧墊圈等緊固，並請使用0.4~0.6N·m的緊固轉矩。

When installing, please use 2 M3 screws, then tight it with flat washer, spring washer, and also tight with 0.4~0.6N·m torque.

(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.

## ■ 關於絕緣距離 Concerning insulation distance

根據IEC 61058-1/EN 61058-1/GB 15092.1之規定，本開關的最小絕緣層厚度為1.1mm，端子和安裝板之間的最小空間距離為1.9mm。如果無法確保零部件所要求的絕緣距離，請使用絕緣護罩或隔板來保證絕緣距離。

According to IEC 61058-1/EN 61058-1/GB 15092.1, the least thickness insulation layer should be 1.1mm, the smallest space distance between the terminal and install board is 1.9mm. If the parts insulation distance cannot be guaranteed, please use insulate cover or guard board to guarantee the insulation distance.

## ■ 關於微小負載電路中的使用

Concerning use in small load circuit

如果在開關微小負載電路中使用一般負載用開關，可能會引起接觸不良。

Use general load switch in small load circuit, bad contact may happen

請參考下圖在使用區域的範圍內使用開關，並根據需要插入觸點保護電路。

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

Use general load switch in small load circuit, bad contact may happen

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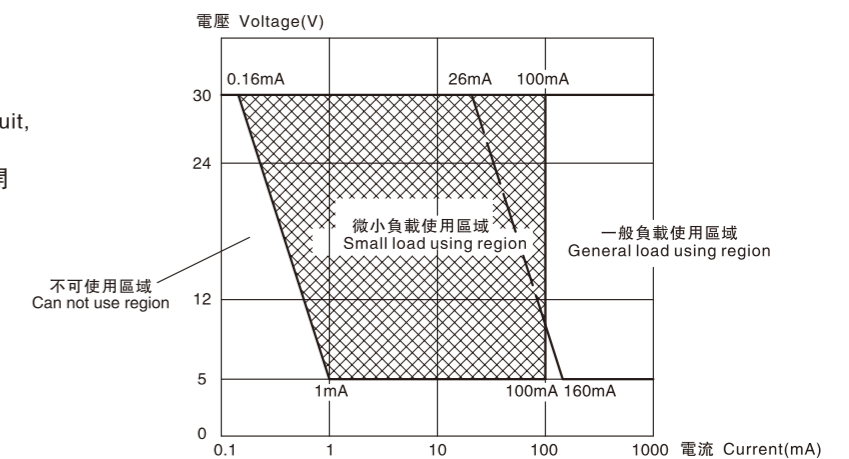
Please refer to the chart below, use switch within using region, and insert contact to protect circuit according to the needs.

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

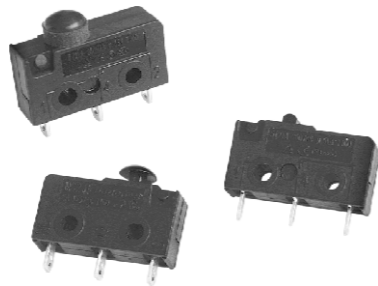


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## MS2型微動開關系列 Micro switch series

### ◆ 特點和用途 Characteristics and usage

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



### ◆ 技術特性 Technical Characteristics

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

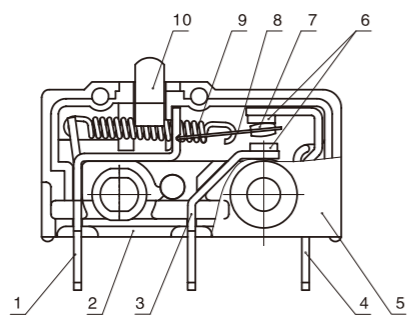
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### ◆ 型號規格命名及含義 Model number legend and meanings

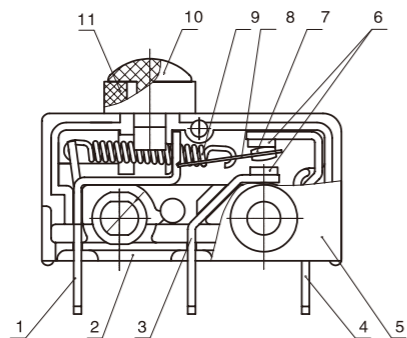
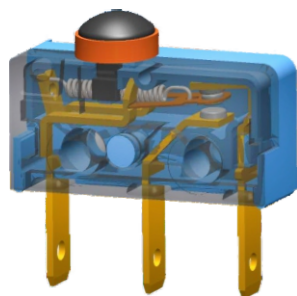
MS2 □-□□□□-□□□□-(□)  
1 2 3 4 5 6 7 8 9 10

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

◆ 內部構造圖 Internal configuration drawing



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



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

◆ 接線端尺寸 Terminal dimensions

F: 焊接端子 Solder terminal	T: 快接端子 #110 Quick connect terminal #110	P: PCB端子 PCB terminal
<p>公共端 Common terminal</p> <p>常開端 NO terminal</p> <p>常閉端 NC terminal</p>	<p>H: PCB端子之二 PCB terminal No.2</p>	<p>S: PCB端子之三 PCB terminal No.3</p>

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◆ 接觸形式說明圖 Circuit illustration

轉換式 SPDT	常開式 SPST-NO	常閉式 SPST-NC

◆ 安裝孔尺寸 Mounting hole dimensions

安裝孔尺寸	PCB端子 PCB terminal
<p>2-<math>\varnothing</math>2.6或2-M2.3</p> <p>9.5</p>	<p>3-<math>\varnothing</math>1.7 按鈕位置 Plunger position</p> <p>4.75</p> <p>7.5</p> <p>15</p>

◆ 外殼類型圖 Cover types drawing

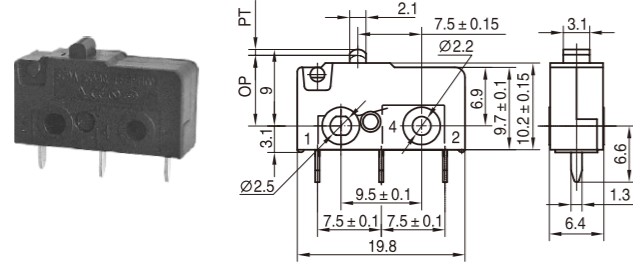
無凸臺 No convexity	有凸臺 Has convexity
	<p>0.5</p>

◆ 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(has dustproof ring)	非圓形按鈕 Not round plunger
<p><math>\varnothing</math>5.5</p> <p>3.6</p> <p>2.1</p> <p>2.9</p>	<p><math>\varnothing</math>6</p> <p>3.6</p>	<p>2.1</p> <p>2.1</p> <p>3.1</p> <p>2.1</p> <p>1.6</p> <p>2.1</p> <p>3.1</p>

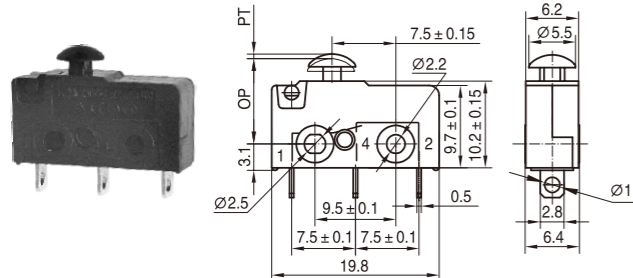
## ◆ 外形尺寸和動作特性 Dimensions and operating characteristics

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



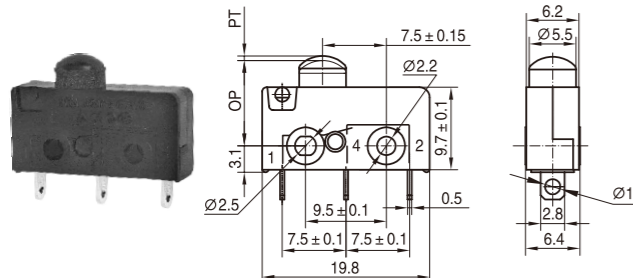
型號 Model	MS2-□Z0C-P100A	MS2-□Z0C-P150A	MS2-□Z0C-P200A	MS2-□Z0C-P300A
OF Max(N)	1.00	1.50	2.00	3.00
RF Min(N)	0.25	0.40	0.60	0.80
PT Max(mm)	0.8			
OT Min(mm)	0.5			
MD Max(mm)	0.2			
OP(mm)	8.5 ± 0.4			

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		

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## ◆ 請正確使用 Please use it correctly

【共通注意事項】請參閱相關頁

【Common use】please refer to related pages

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

(1) 將導線焊接到端子上時，請先將導線穿過端子孔後再進行焊接。

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

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

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

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

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

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

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

## ■ 關於絕緣距離 Concerning insulation distance

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

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

## ■ 關於安裝 Concerning installation

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

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

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

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

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

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

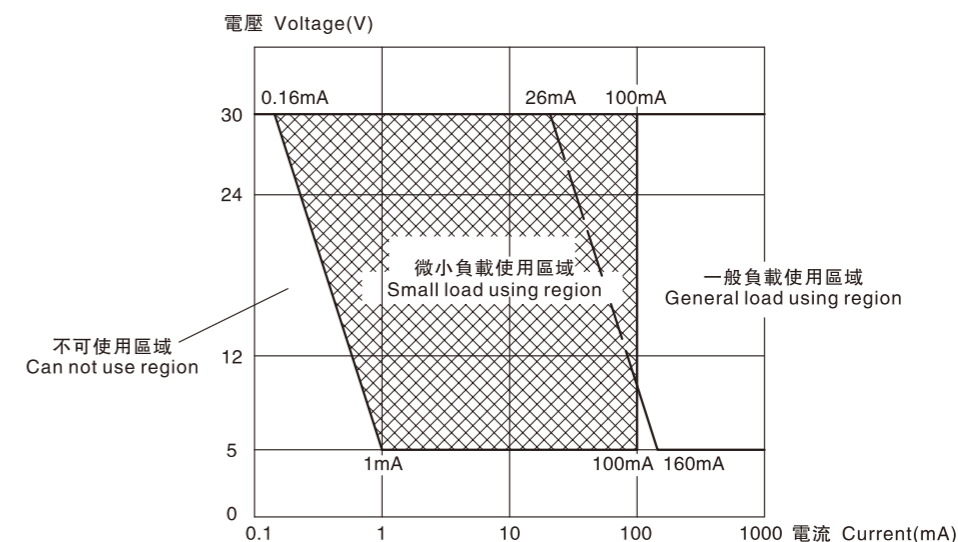
## ■ 關於微小負載電路中的使用 Concerning use in small load circuit

如果在開關微小負載電路中使用一般負載用開關，可能會引起接觸不良。

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

請參考下圖在使用區域的範圍內使用開關，並根據需要插入觸點保護電路。

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



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## MS3型微動開關系列 Micro switch series

## ◆ 特點和用途 Characteristics and usage

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



## ◆ 技術特性 Technical Characteristics

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

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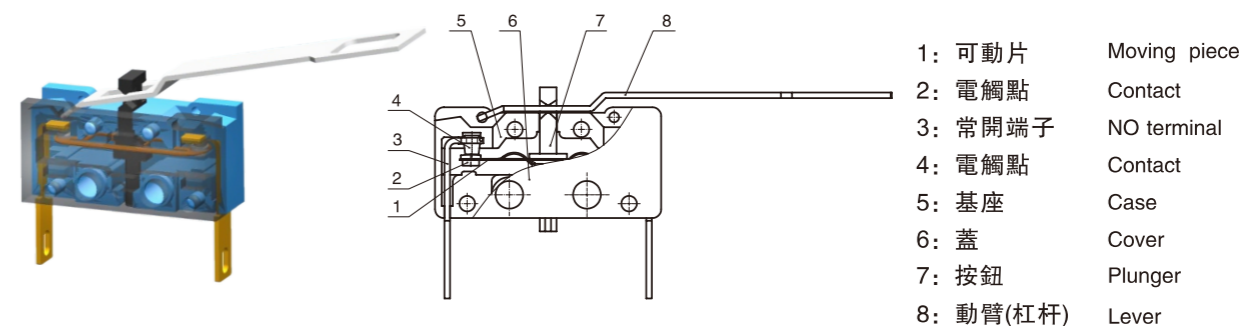
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## ◆ 型號規格命名及含義 Model number legend and meanings

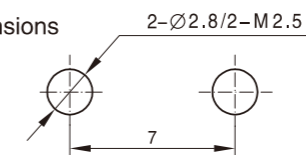
MS3 □-□□□□-□□□-□  
1 2 3 4 5 6 7 8 9

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

## ◆ 內部構造圖 Internal configuration drawing

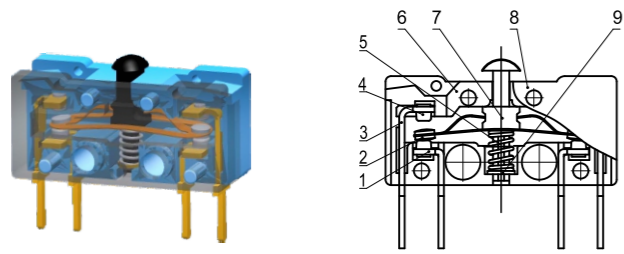


## ◆ 安裝孔尺寸 Mounting hole dimensions



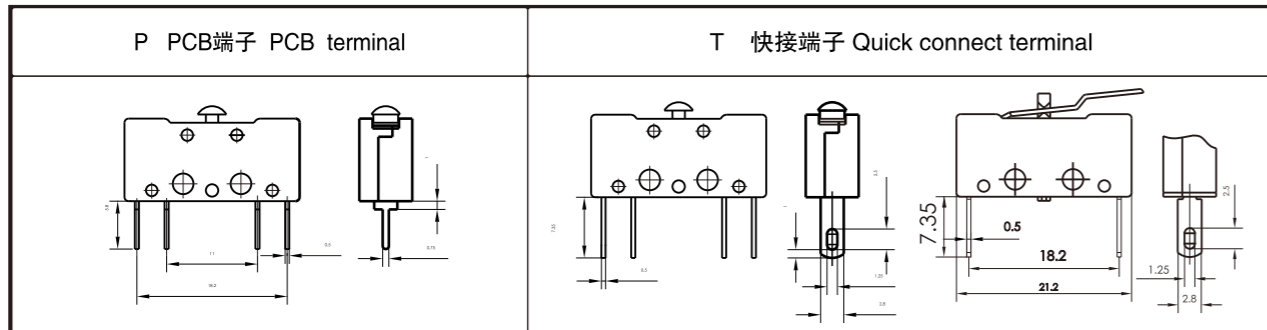
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◆ 内部構造圖 Internal configuration drawing

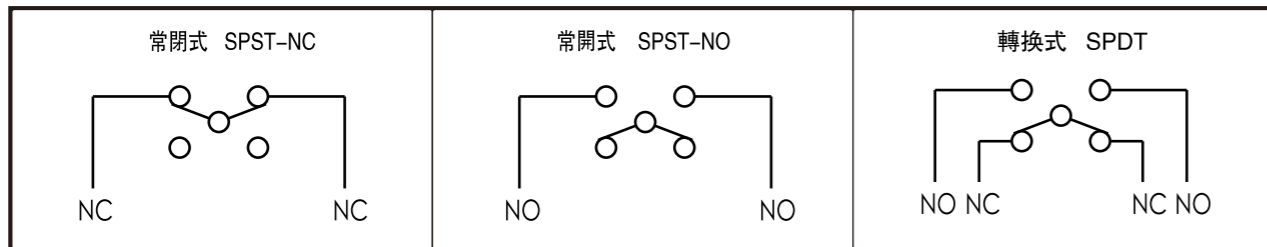


- 1: 常閉端子 NC terminal
- 2: 電觸點 Contact
- 3: 常開端子 NO terminal
- 4: 電觸點 Contact
- 5: 彈簧 Spring
- 6: 基座 Case
- 7: 按鈕 Plunger
- 8: 蓋 Cover
- 9: 墊圈 Cushion ring

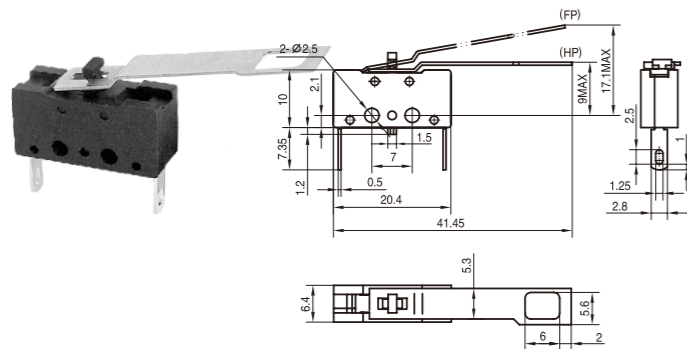
◆ 接線端配置及尺寸 Connect terminals collocation and dimensions



◆ 接觸形式說明圖 Circuit illustration

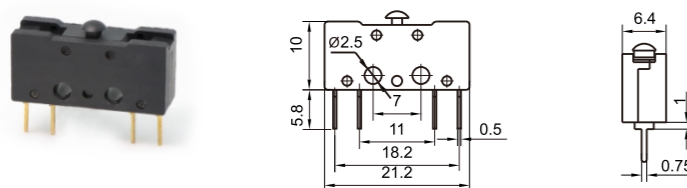


MS3-D1A-T050



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

MS3-Z0A-P160B



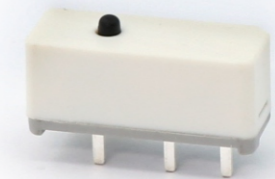
型號 Model	MS3-Z0A-P160B
OF MAX(N)	1.60
RF MIN(N)	0.40
PT MAX(mm)	1.0
OP(mm)	8.4 ± 0.4

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MS5型微動開關系列 Micro switch series

◆ 用途 Usage

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



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

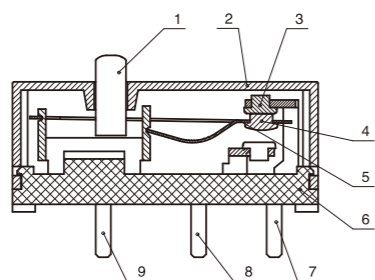
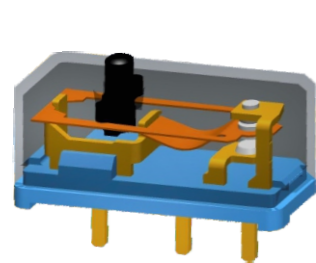
MS5 -□-(□)  
1 2

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

◆ 技術特性 Technical Characteristics

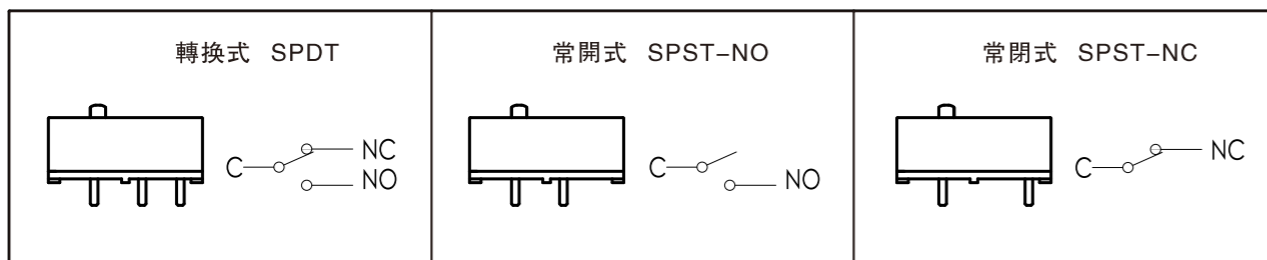
項目 Item	特性值 Value	
環境溫度 Environment temperature	-40~+85°C	
相對濕度 Relative humidity	45%~85%,40°C	
額定電流 Rated current	3A/6A/10A	
額定電壓 Rated voltage	DC12V	
動作力 Operating force	≤4.5N	
工作速度 Operating speed	0.1mm~1m/s	
工作頻率 Operating Frequency	機械60次/min; 電氣 25次/min Mechanical 60 cycles/min; electrical 25cycles/min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

◆ 内部構造圖 Internal configuration drawing

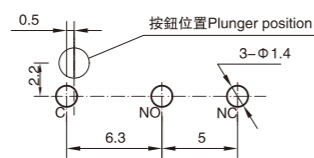


- 1: 按鈕 Plunger
- 2: 蓋 Cover
- 3: 電觸點 Contact
- 4: 電觸點 Contact
- 5: 可動片 Moving piece
- 6: 基座 Case
- 7: 常閉端子 NC terminal
- 8: 常開端子 NO terminal
- 9: 支架 Support

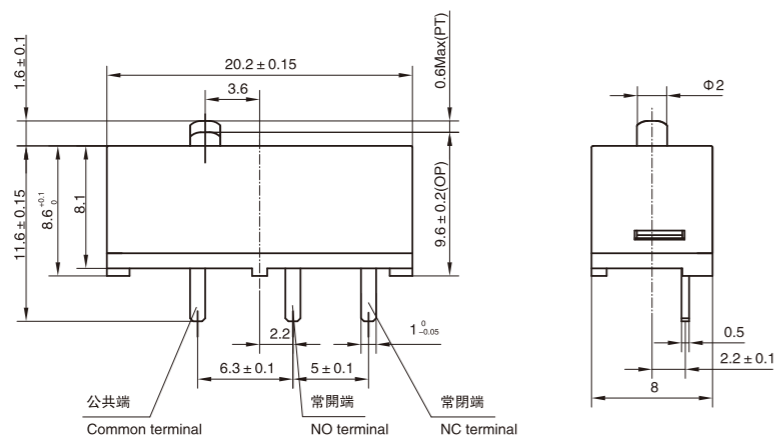
◆ 接觸形式說明圖 Circuit illustration



◆ 安裝孔尺寸 Mounting hole dimension



◆ 外形尺寸 Dimensions



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MS6型微動開關系列 Micro switch series

◆ 特點和用途 Characteristic and usage

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



◆ 技術特性 Specifications

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

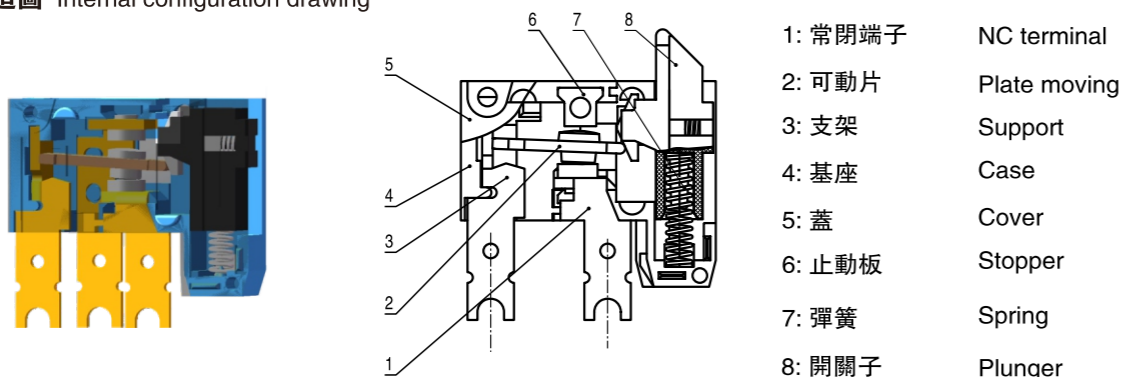


◆ 型號規格命名及含義 Model number legend and meanings

MS6 □-□□□-□□□-□-(□)  
1 2 3 4 5 6 7 8 9

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

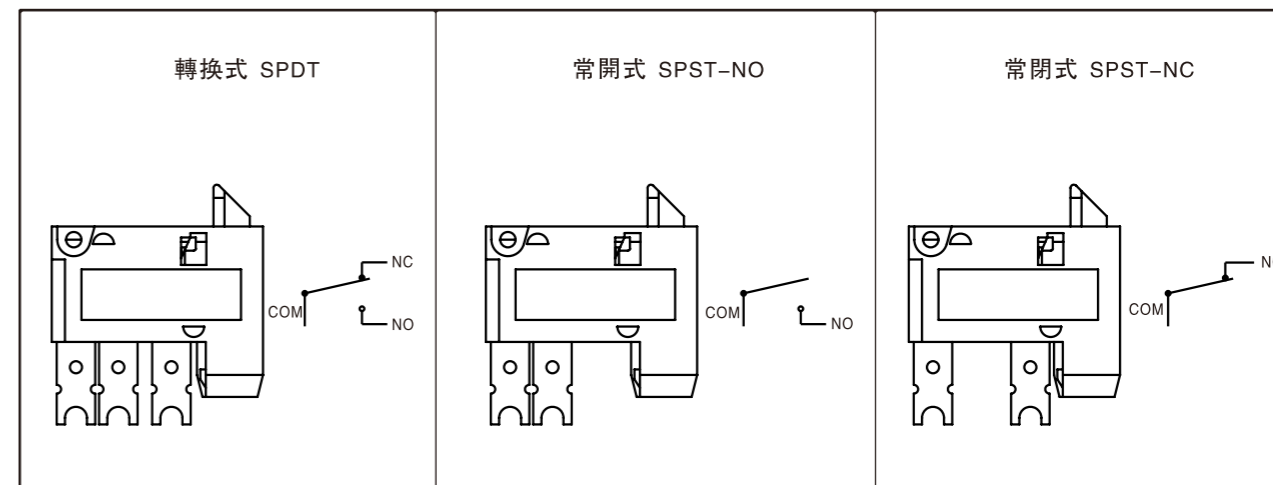
◆ 內部構造圖 Internal configuration drawing



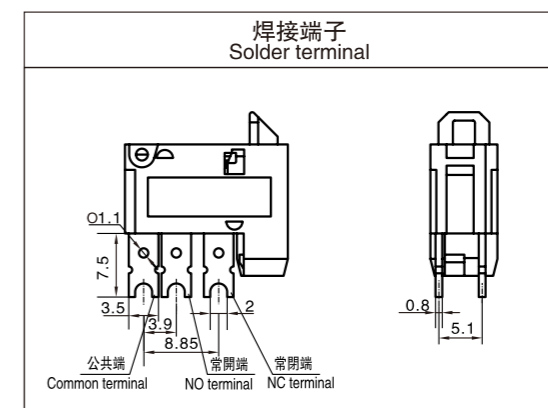
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◆ 接觸形式說明圖 Circuit illustration

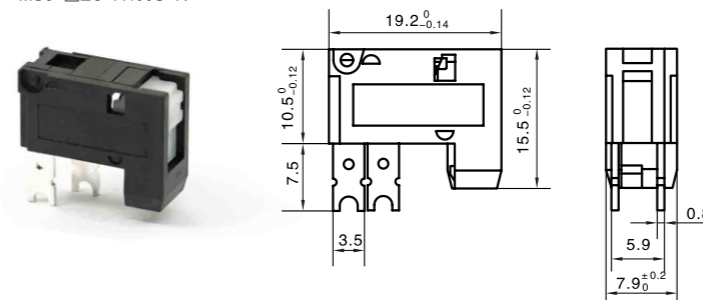


◆ 接線端尺寸 Terminal dimensions

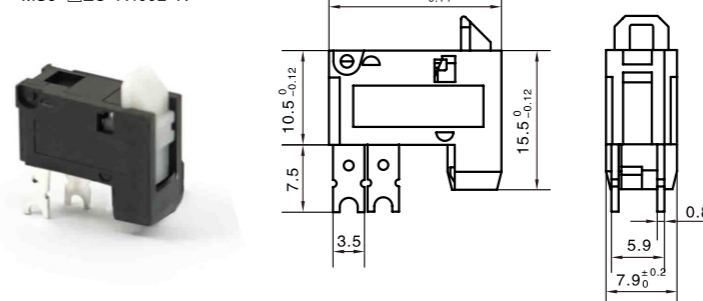


◆ 外形尺寸和動作特性 Dimensions and operating characteristics

MS6-□ZO-A400S-R



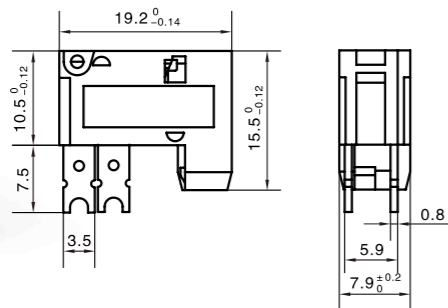
MS6-□ZO-A400L-R



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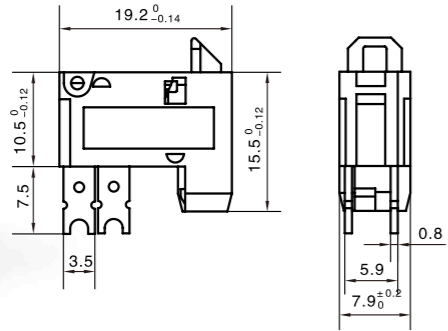
## ◆ 外形尺寸和動作特性 Dimensions and operating characteristics

MS6-□ZO-A200S-N



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

MS6-□ZO-A200L-R



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

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## ◆ MS7型微動開關系列 Micro switch series

## ◆ 特點和用途 Characteristic and usage

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



## ◆ 技術特性 Specifications

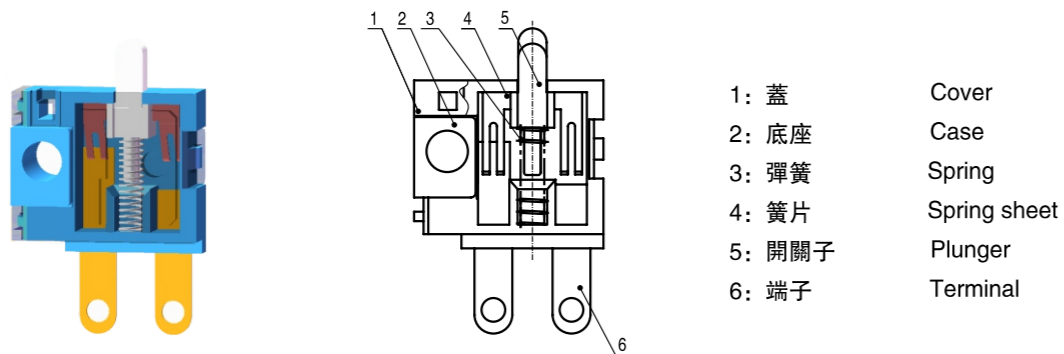
項目 Item	特性值 Value
溫度等級 Degree of temperature	25T85
動作位置 Operating position	4.3 ± 0.4 mm
動作力 Operating force	0.39 ± 0.25N(40 ± 25gf)
絕緣電阻 Insulation resistance	≥100MΩ (500VDC)
接觸電阻 Contact resistance	≤200mΩ
耐電壓 Test voltage	AC250V
壽命 Life	電氣 ≥30,000次 Electrical ≥30,000 cycles

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

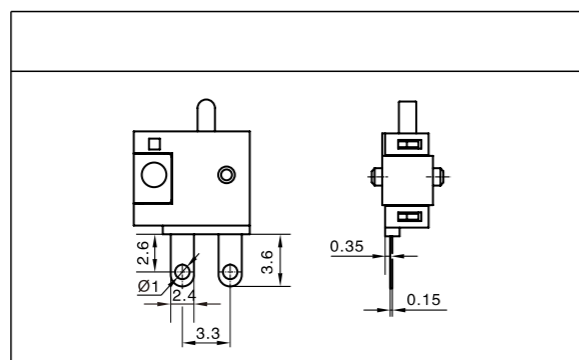
MS7 - □ □ - □ - ( □ )  
1 2 3 4

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

## ◆ 内部構造圖 Internal configuration drawing

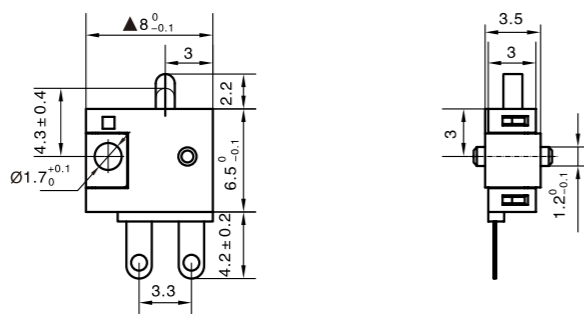


## ◆ 接線端尺寸 Terminal dimensions

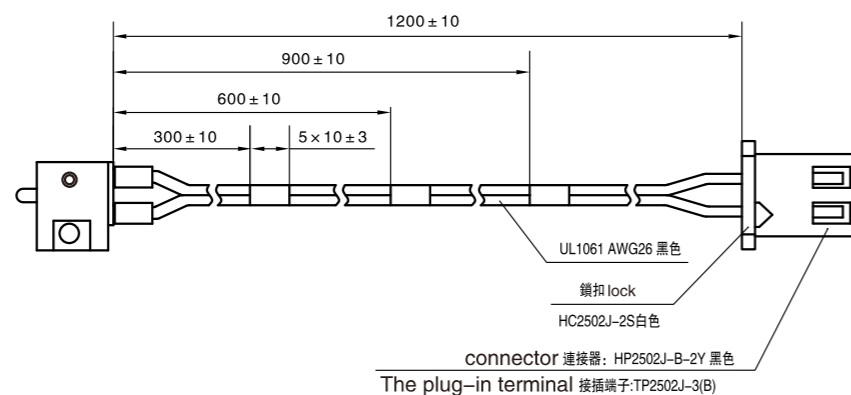


## ◆ 外形尺寸和動作特性 Dimensions and operating characteristics

MS7-0-A



MS7-0-A-02



## MS9型微動開關系列 Micro switch series

## ◆ 特點和用途 Characteristic and usage

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



## ◆ 技術特性 Specifications

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

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

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

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

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## ◆ 接線端尺寸 Terminal dimensions

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

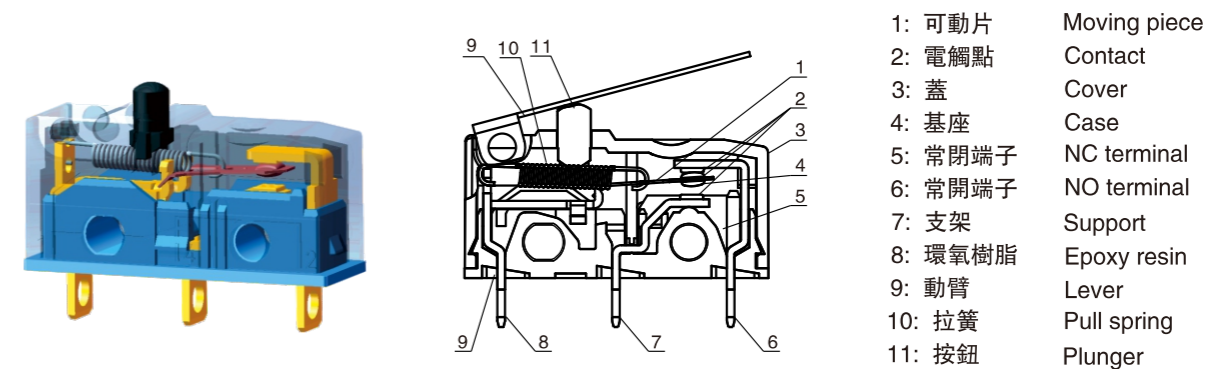
## ◆ 安裝孔尺寸 Mounting hole dimension

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

## ◆ 接觸形式說明圖 Circuit illustration

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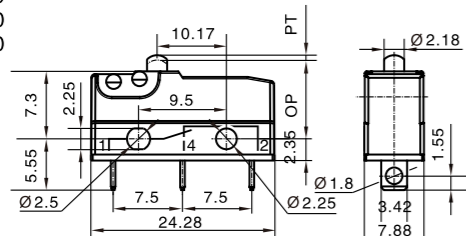
## ◆ 內部構造圖 Internal configuration drawing



提供安全、可靠的通斷服務，讓電器更完美

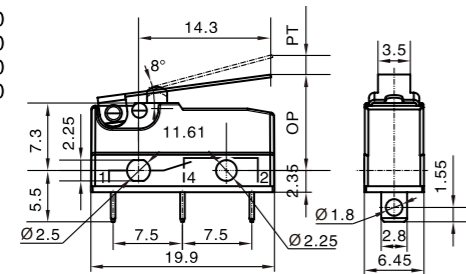
## ◆ 外形尺寸和動作特性 Dimensions and operating characteristics

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



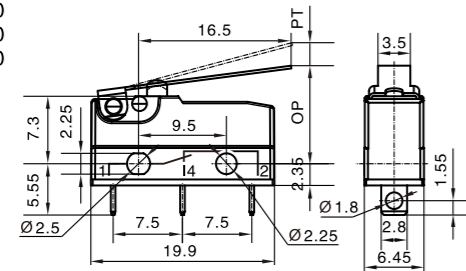
型號 Model	MS9-□Z0-F100	MS9-□Z0-F150	MS9-□Z0-F250	MS9-□Z0-F300
OF Max(N)	1.00	1.50	2.50	3.00
RF Min(N)	0.10	0.35	0.40	0.60
PT Min(mm)	1.1			
OT Min(mm)	0.6			
MD Max(mm)	0.2			
OP(mm)	8.4 ± 0.3			

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



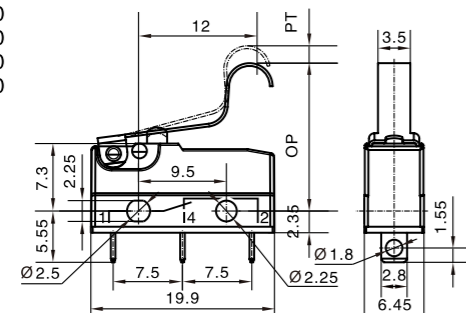
型號 Model	MS9-□Z3-F100	MS9-□Z3-F150	MS9-□Z3-F250	MS9-□Z3-F300
OF Max(N)	0.45	0.60	1.00	1.20
RF Min(N)	0.03	0.08	0.10	0.15
PT Min(mm)	4.00	4.00	4.50	4.50
OT Min(mm)	2.00	2.00	1.50	1.50
MD Max(mm)	0.80	0.80	0.80	0.80
OP(mm)	10.7 ± 1.3	10.7 ± 1.3	10.7 ± 1.6	10.7 ± 1.6

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



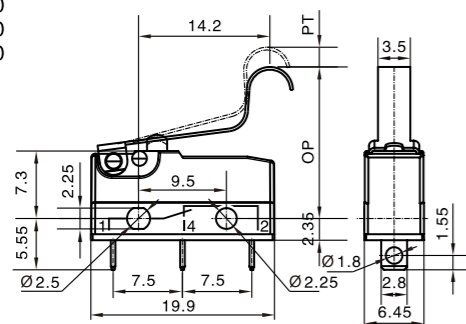
型號 Model	MS9-□Z2-F100	MS9-□Z2-F150	MS9-□Z2-F250	MS9-□Z2-F300
OF Max(N)	0.40	0.50	0.85	1.10
RF Min(N)	0.02	0.06	0.08	0.12
PT Min(mm)	4.50	4.50	5.00	5.00
OT Min(mm)	2.00	2.00	1.50	1.50
MD Max(mm)	1.20	1.20	1.20	1.20
OP(mm)	11.1 ± 1.5	11.1 ± 1.5	11.1 ± 1.8	11.1 ± 1.8

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



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

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



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

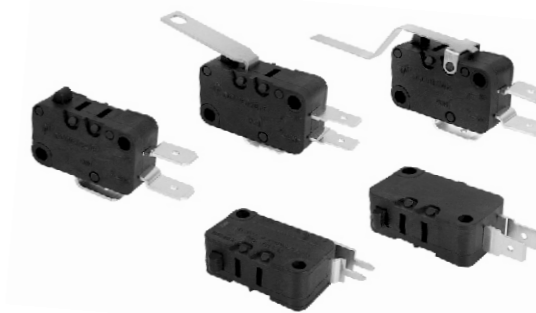
To provide a safe and reliable on-off service, let electric appliances more perfect

DONGNAN provide you professional micro switch solutions.

## MS10型微動開關系列 Micro switch series

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

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



## ◆ 技術特性 Technical Characteristics

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

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

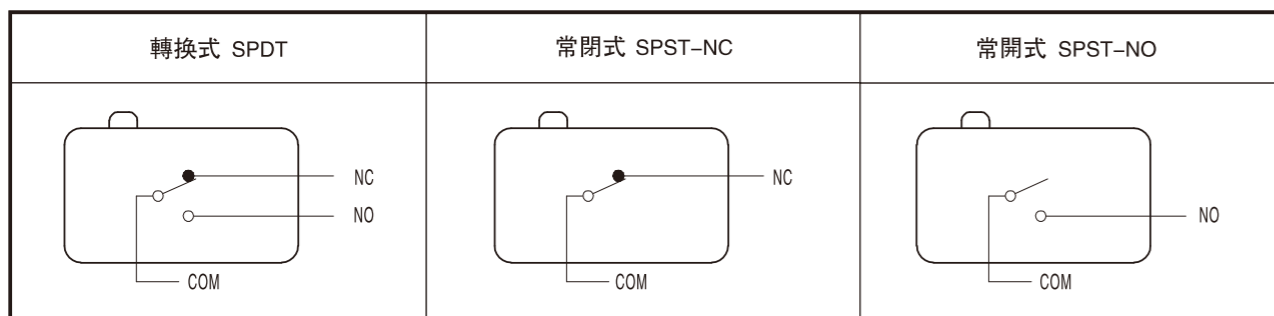
提供安全、可靠的通斷服務，讓電器更完美

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

MS10 □-□□□-□□- (□)  
1 2 3 4 5 6 7

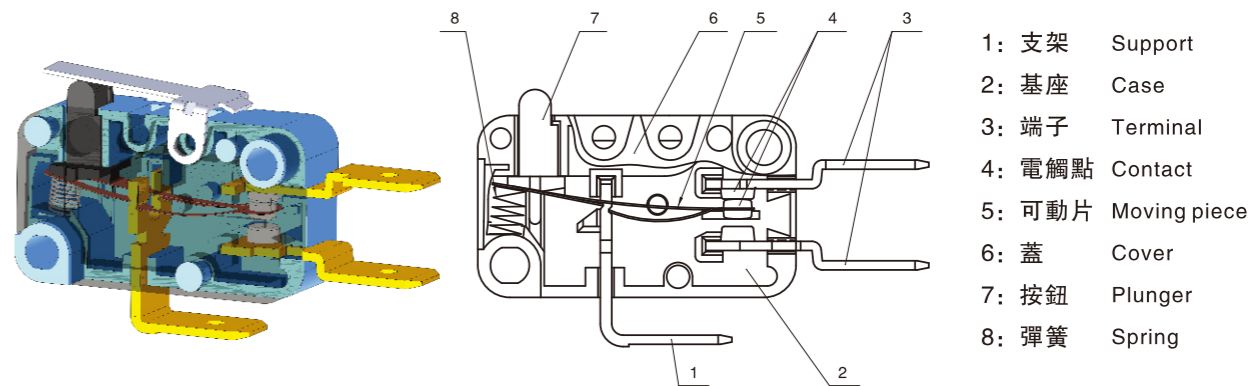
<b>1</b> 溫度等級 Degrees of temperature	無標記 No mark: 25T125	
<b>2</b> 額定值 Ratings	MS10-16: 16(4)A125/250VAC 16GPA125/250VAC 1/2hp125/250VAC 10A30VDC MS10-10: 10A125/250VAC 10(3)A125/250VAC 10GPA125/250VAC 1/4hp250VAC 1/2hp125VAC 1/3hp125/250VAC 8A30VDC MS10-06: 6A125/250VAC 6(2)A125/250VAC 6GPA125/250VAC 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	<b>4</b> 驅動形式 Actuator forms  0: 無動臂 No lever A1/1: 短動臂 Short lever A2/2: 長動臂 Long lever A3/3: 中動臂 Middle lever A4/4: 短滾輪臂 Short roller A5/5: 長滾輪臂 Long roller A6/6: 弧形動臂 Arc lever A: □/□非標準動臂 Not standard lever  注: 1) A 表示動臂安裝在靠近按鈕位置, 無字母A表示動臂安裝在離按鈕較遠位置。 2) □表示非標準動臂的代號。 3) 若動臂為內安裝式, 則在動臂代號後加字母N。 Note: 1) A Indicate the lever near to the plunger, no A indicate the lever far away from the plunger 2) □Indicate not standard lever plunger. 3) If lever is amoundard inside, add "N" after the lever code.
<b>3</b> 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)	<b>5</b> 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  <b>6</b> 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.  <b>7</b> 附加規格編號 Additional spec numbers 適用於apply to: 1) 當開關使用了非標準零件如非標準端子時; When used not standard parts such as not standard terminal. 2) 當顧客有特殊動作特性值或其它要求時。 When customer has particular operating value or other requirements. 附加規格編號用阿拉伯數字表示, 在沒有附加規格編號時, 該位置空缺。 Additional specs number shows by Arabic numerals. If there is no additional numbers, the place is vacant.

◆ 接觸形式說明圖 Circuit illustration

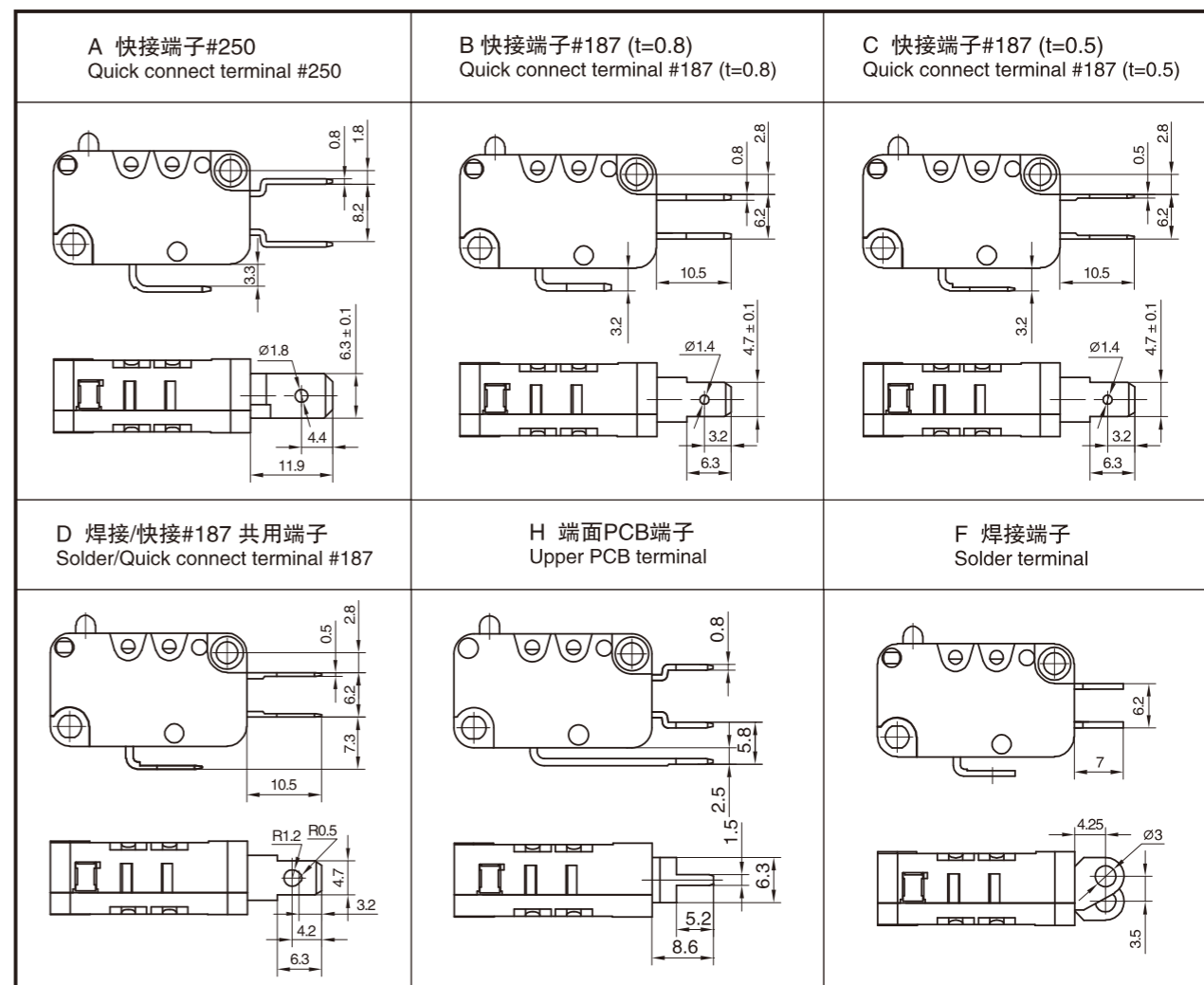


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◆ 內部構造圖 Internal configuration drawing

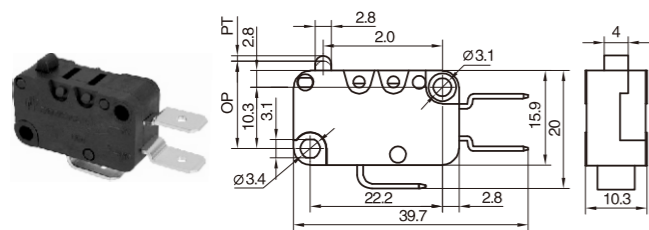


◆ 接線端配置及尺寸 Connect terminals collocation and dimensions



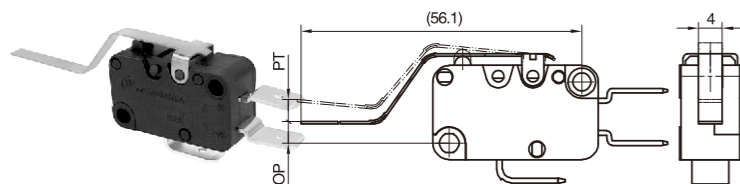
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

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



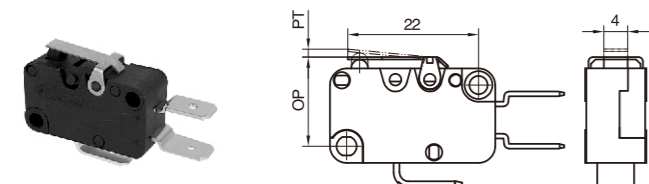
型號 Model	MS10-□Z0-A015	MS10-□Z0-A025	MS10-□Z0-A050	MS10-□Z0-A100
OF Max(N)	0.15	0.25	0.50	1.00
RF Min(N)	0.02	0.06	0.13	0.25
PT Max(mm)	1.2			
OT Min(mm)	1.0			
MD Max(mm)	0.3			
OP(mm)	14.6±0.5			

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



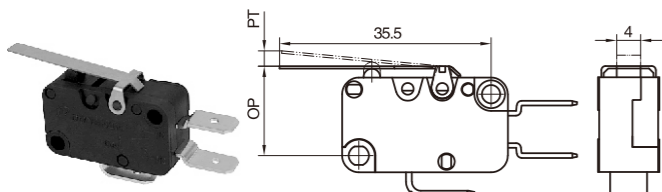
型號 Model	MS10-□ZB1-A015	MS10-□ZB1-A025	MS10-□ZB1-A050	MS10-□ZB1-A100
OF Max(N)	0.05	0.065	0.2	0.4
RF Min(N)	0.005	0.015	0.03	0.08
PT Max(mm)	6.2			
OT Min(mm)	2.5			
MD Max(mm)	1.7			
OP(mm)	3.2±2			

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



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

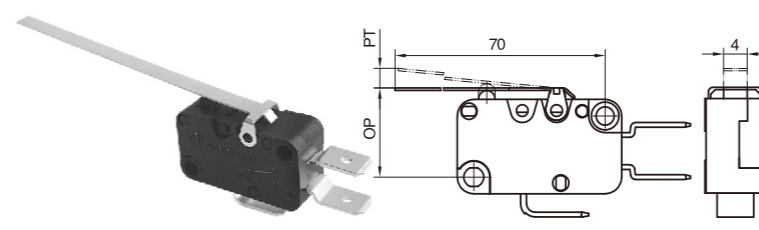
MS10-□Z3-A015  
MS10-□Z3-A025  
MS10-□Z3-A050  
MS10-□Z3-A100



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

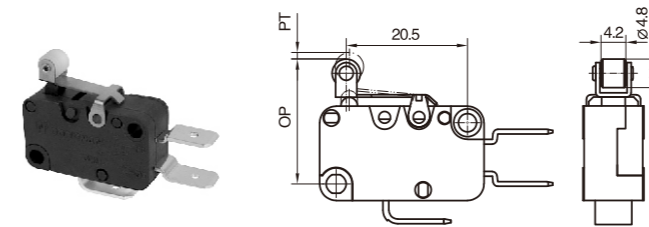
外形尺寸和動作特性 Dimensions and operating characteristics

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



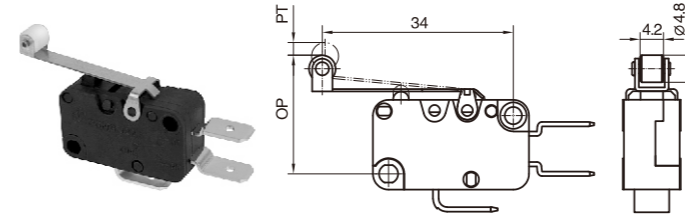
型號 Model	MS10-□Z2-A015	MS10-□Z2-A025	MS10-□Z2-A050	MS10-□Z2-A100
OF Max(N)	0.05	0.07	0.14	0.25
RF Min(N)	0.005	0.015	0.025	0.05
PT Max(mm)	7.6			
OT Min(mm)	4.0			
MD Max(mm)	1.8			
OP(mm)	15.2±2.5			

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



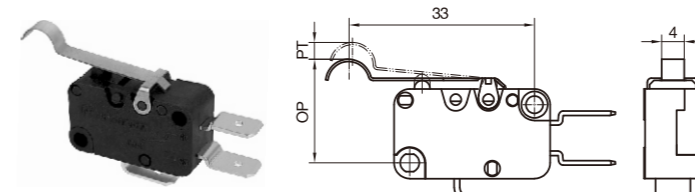
型號 Model	MS10-□Z4-A015	MS10-□Z4-A025	MS10-□Z4-A050	MS10-□Z4-A100
OF Max(N)	0.15	0.25	0.50	1.00
RF Min(N)	0.02	0.05	0.12	0.25
PT Max(mm)	1.3			
OT Min(mm)	1.0			
MD Max(mm)	0.4			
OP(mm)	20.3±0.8			

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



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

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

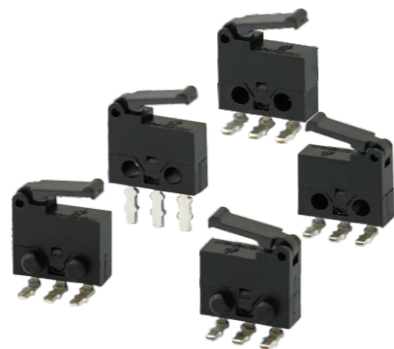


型號 Model	MS10-□Z6-A015	MS10-□Z6-A025	MS10-□Z6-A050	MS10-□Z6-A100
OF Max(N)	0.10	0.15	0.25	0.50
RF Min(N)	0.015	0.025	0.06	0.12
PT Max(mm)	3.5			
OT Min(mm)	2.0			
MD Max(mm)	1.0			
OP(mm)	18.6±1.2			

## MS12型微動開關系列 Micro switch series

## ◆ 特點和用途 Characteristic and usage

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



## ◆ 技術特性 Specifications

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

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

MS12-□□□-□□-(□)  
1 2 3 4 5 6

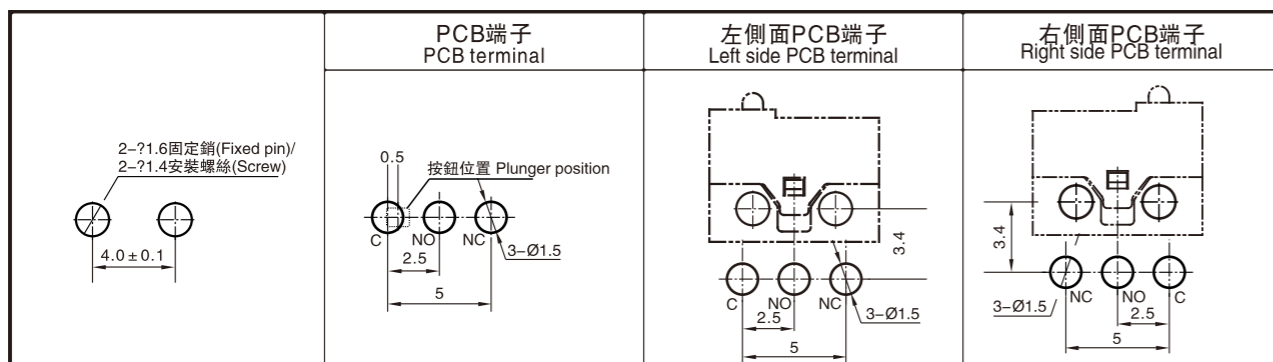
<b>1</b> 額定值 Ratings	A: 50 ~ 500mA 30VDC 3E4 25T70(默認銀觸點) B: 5 ~ 50mA 30VDC 3E4 25T70(默認鍍金觸點)	<b>4</b> 端子類型 Terminal types	L: 左側面PCB端子 Left side PCB terminal R: 右側面PCB端子 Right side PCB terminal Y: 非標準端子not standard terminal
<b>2</b> 接觸形式 Circuit	Z:轉換式 SPDT T:常開(接通)式 SPST-NO D:常閉(按斷)式 SPST-NC (見說明圖 See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

## ◆ 接線端尺寸 Terminal dimensions

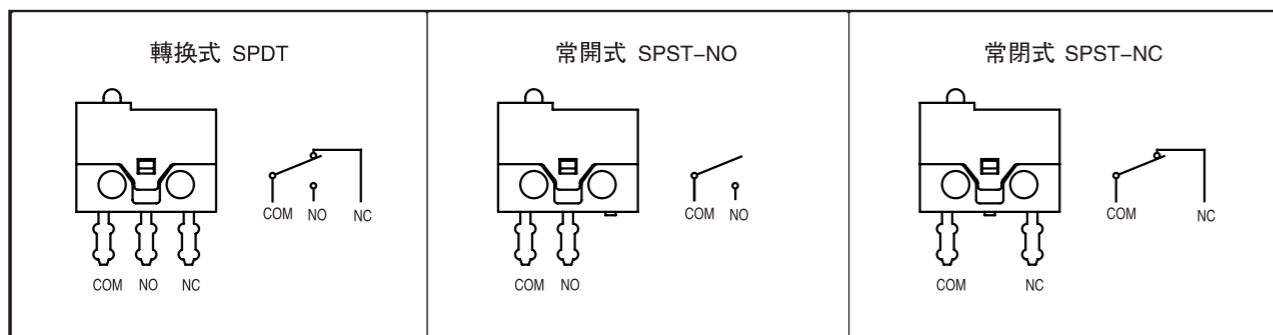
<b>H</b> 焊接端子 Solder terminal 	<b>L</b> 左側面焊接端子 Left side solder terminal 	<b>R</b> 右側面焊接端子 Right side solder terminal 
<b>P</b> PCB端子 PCB terminal 	<b>L</b> 左側面PCB端子 Left side PCB terminal 	<b>R</b> 右側面PCB端子 Right side PCB terminal 



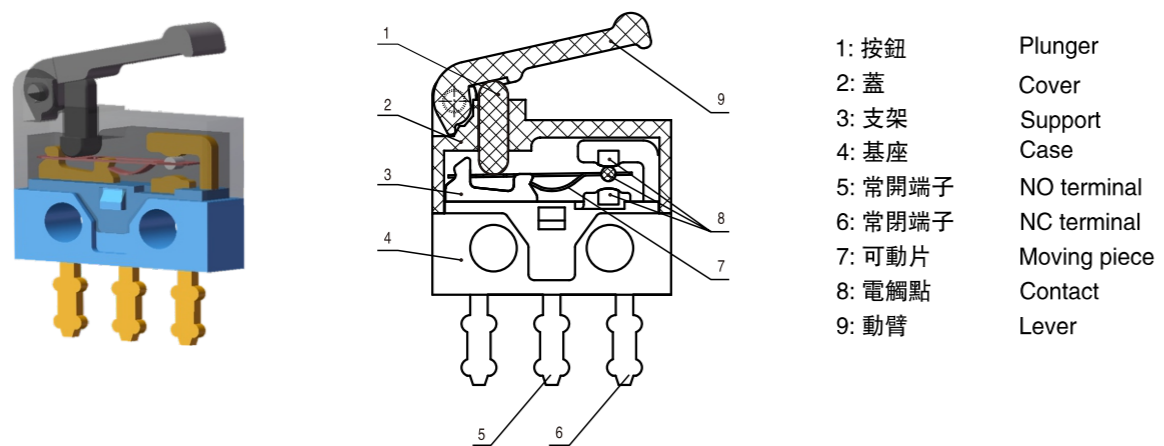
◆ 安裝孔尺寸 Mounting hole dimensions



◆ 接觸形式說明圖 Circuit illustration



◆ 內部構造圖 Internal configuration drawing

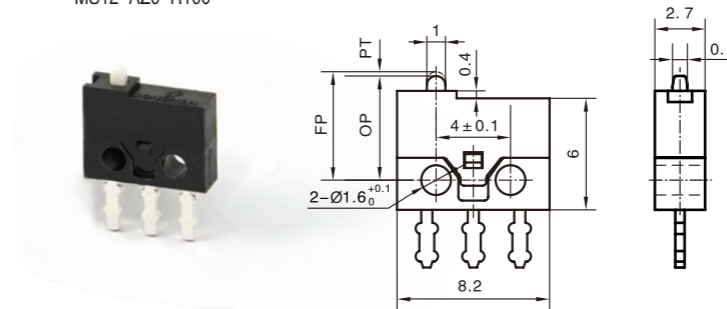


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◆ 外形尺寸和動作特性 Dimensions and operating characteristics

按鈕型 Pin Plunger Models

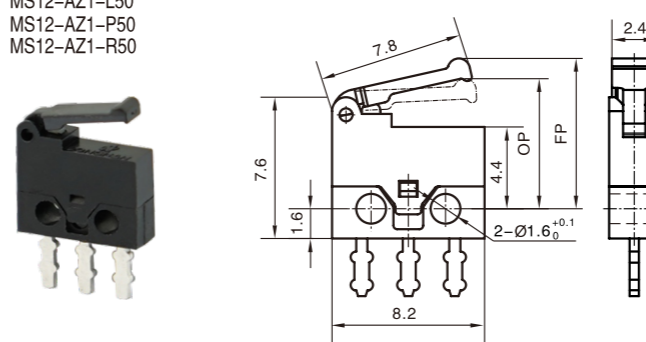
- MS12-AZ0-H100
- MS12-AZ0-HL100
- MS12-AZ0-HR100
- MS12-AZ0-L100
- MS12-AZ0-P100
- MS12-AZ0-R100



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

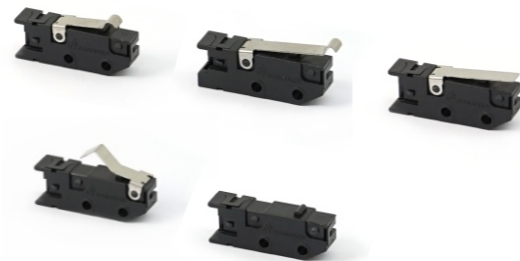


OF Max(N)	0.5
RF Min(N)	0.06
PT Max(mm)	1.6
OT Min(mm)	0.3
MD Max(mm)	0.25
FP Max(mm)	8.3
OP(mm)	7.0 ± 0.5

## MS13 型微動開關系列 Micro switch series

### ◆ 特點和用途 Characteristic and usage

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



### ◆ 技術特性 Specifications

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

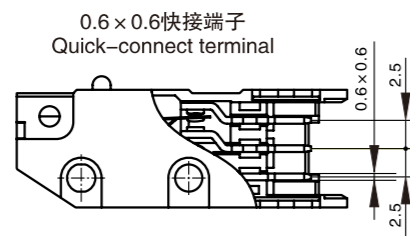
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### ◆ 型號規格命名及含義 Model number legend and meanings

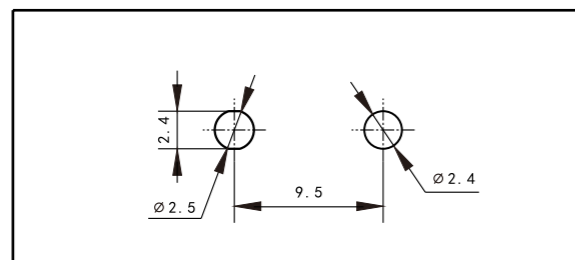
MS13□-□□□-□□-(□)  
1 2 3 4 5 6 7

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

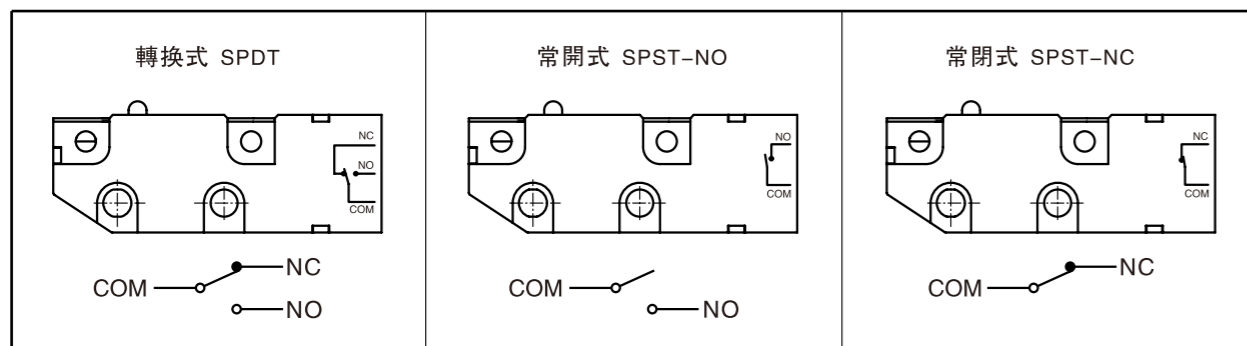
◆ 接線端尺寸 Terminal dimensions



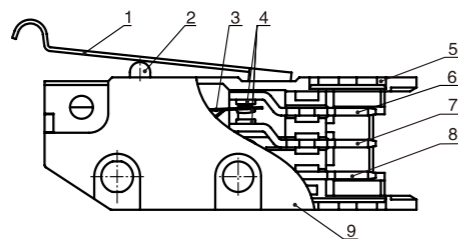
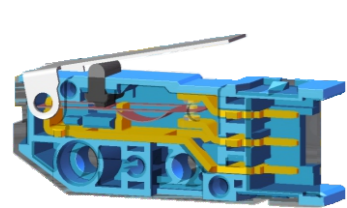
◆ 安裝孔尺寸 Mounting hole dimension



◆ 接觸形式說明圖 Circuit illustration



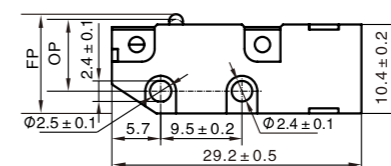
◆ 內部構造圖 Internal configuration drawing



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

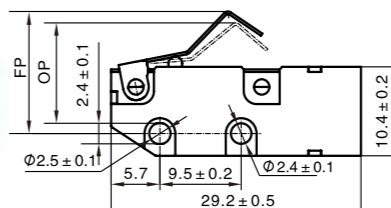
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

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



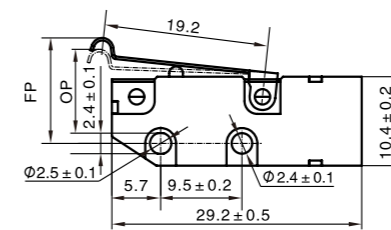
型號 Model	MS13-5Z0-X180	MS13-5Z0-X130
OF Max(N)	1.80	1.30
RF Min(N)	0.5	0.3
FP Max(mm)	9.0	
OT Min(mm)	0.4	
MD Max(mm)	0.1	
OP(mm)	8.4 ± 0.3	

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



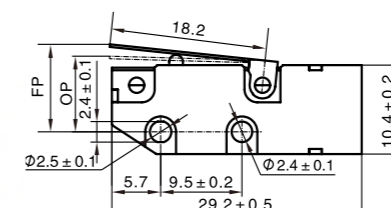
型號 Model	MS13-5ZAA-X180	MS13-5ZAA-X130
OF Max(N)	1.2	0.80
RF Min(N)	0.3	0.1
FP Max(mm)	14.5	
OT Min(mm)	1.0	
MD Max(mm)	0.5	
OP(mm)	12.8 ± 0.8	

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



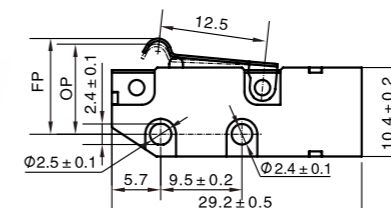
型號 Model	MS13-5ZB-X180	MS13-5ZB-X130
OF Max(N)	1.1	0.80
RF Min(N)	0.4	0.2
FP Max(mm)	12.2	
OT Min(mm)	0.6	
MD Max(mm)	0.5	
OP(mm)	10.6 ± 0.6	

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



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

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

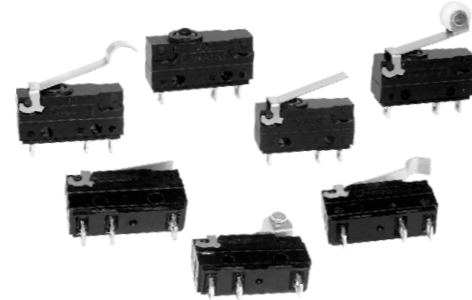


型號 Model	MS13-5Z6-X180	MS13-5Z6-X130
OF Max(N)	1.50	1.2
RF Min(N)	0.5	0.3
FP Max(mm)	11.2	
OT Min(mm)	0.6	
MD Max(mm)	0.3	
OP(mm)	10.5 ± 0.6	

## 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.
- 接線端子種類齊全，可配備各種導線。  
A variety of contact terminals, provide with 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戶外設備、儀器使用。  
Can be used in environment resistant places application, outdoor apparatus 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
絕緣電阻 Insulation resistance	≥100MΩ (500VDC)
接觸電阻 Contact resistance	端子型 Terminal type ≤50mΩ 導線型 Wire type ≤100mΩ
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity
	帶電金屬零件與地(外殼)之間、接線端與不帶電金屬件之間 Between current-carrying metal parts and Ground(case), and between each terminal and non-current-carrying metal parts.
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm 雙振幅 Double amplitude
抗衝擊 Shock resistance J,M	耐久: 1000m/S <sup>2</sup> (約100G) 最大 endurance: 1000m/S <sup>2</sup> (approx 100G) max 誤動作: 300m/S <sup>2</sup> (約30G) 最大 Wrong action: 300m/S <sup>2</sup> (approx.30G) max
防觸電保護等級 Electric shock proof protection grade	I 級 class
外殼防護等級 Degrees of protection provided by enclosure	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

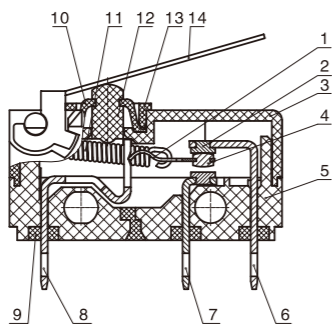
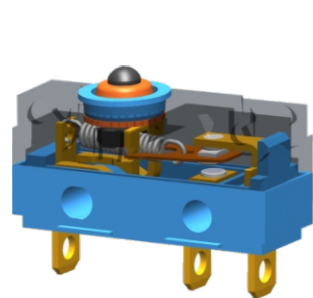
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### ◆ 型號規格命名及含義 Model number legend and meanings

WS1 □-□□□-□□□□□-□  
1 2 3 4 5 6 7 8 9 10

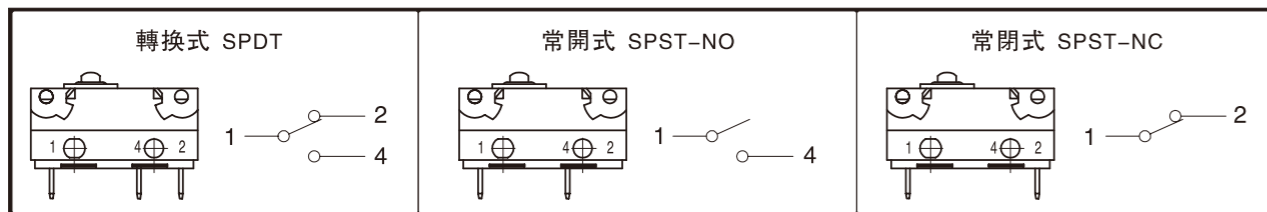
<b>1</b> 溫度等級 Degrees of temperature	無標記 No mark: 20T85 T:25T125	<b>6</b> 動作力(max) Operating force	050: 0.5N 100: 1N 150: 1.5N 200: 2N 注: 若是非標準動作力, 用此動作力上限值表示。 Note: If it is not standard operating force, indicate with the upper limit.
<b>2</b> 額定值 Ratings	無標記 No mark: 5A125VAC, 5GPA125/250VAC 5(2)A125/250VAC 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	<b>7</b> 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
<b>3</b> 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)	<b>8</b> 導線方向及長度 Wire direction and length	R□:導線在按鈕遠端引出 Wire be educed at the distance of plunger L□:導線在按鈕近端引出 Wire be educed at the close of plunger D□:導線在開關下方引出 Wire be educed at the lower part of switch (□為導線長度毫米數) (□ Is the length number- "mm" of the wire)
<b>4</b> 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 5/B5:長滾輪臂 Long roller 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	<b>9</b> 防護等級 Degrees of protection provided by enclosure	無標記 No mark: IP67 IP□□:其它等級 Other degrees
<b>5</b> 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:導線型 wire type	<b>10</b> 附加規格代號及 導線顏色配置代號 Append specs code and wire color code	適用於apply to: 1)當開關使用了非標準零件如非標準端子時; When used not standard parts such as not standard terminal. 2)當顧客有特殊動作特性值或其它要求時; When customer has particular operating value or other requirements. 3)當導線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. ■ 導線顏色配置代號: 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 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線顏色配置代號, 則導線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

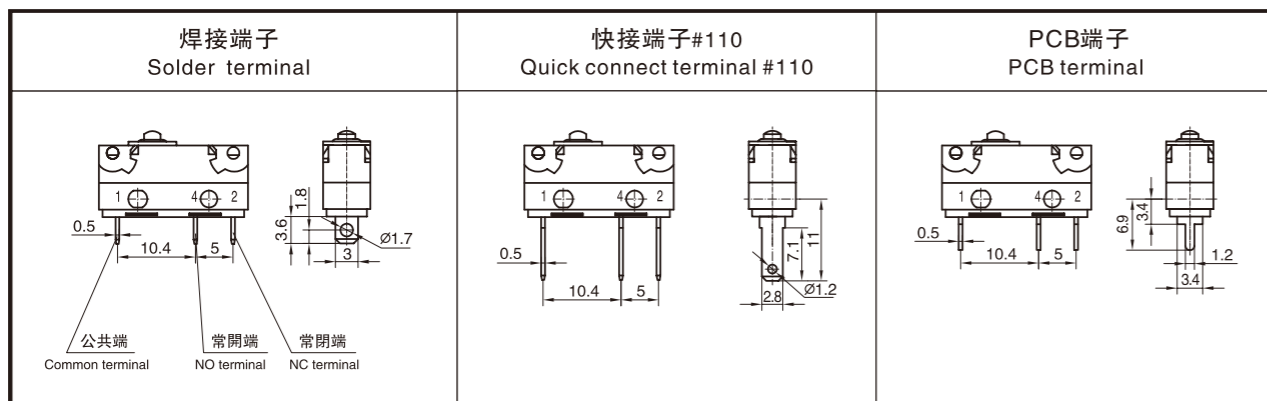


- |         |               |
|---------|---------------|
| 1: 可動片  | Moving piece  |
| 2: 電觸點  | Contact       |
| 3: 蓋    | Cover         |
| 4: 電觸點  | Contact       |
| 5: 基座   | Case          |
| 6: 常閉端子 | NC terminal   |
| 7: 常開端子 | NO terminal   |
| 8: 支架   | Support       |
| 9: 環氧樹脂 | Epoxy resin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

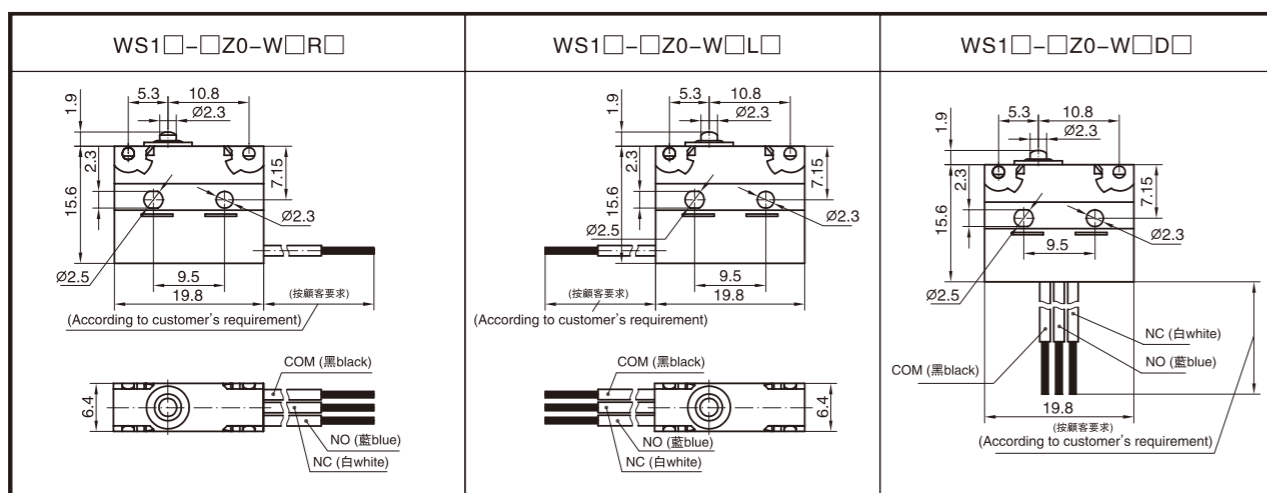
◆ 接觸形式說明圖 Circuit illustration



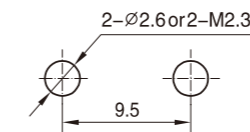
◆ 接線端尺寸 Terminal dimensions



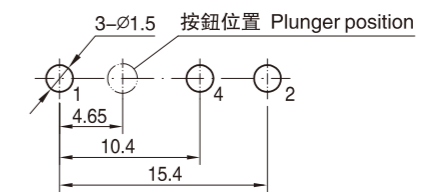
◆ 導線型外形圖 Outline drawing of wire type



安裝孔尺寸 Mounting hole dimensions

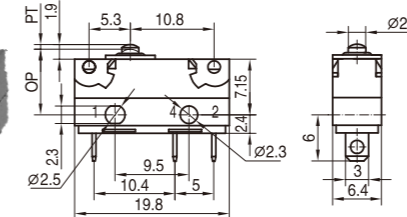
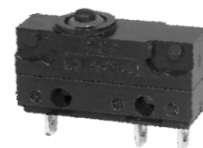


PCB端子 PCB terminal



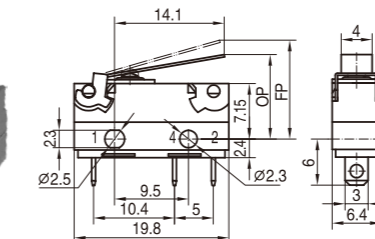
外形尺寸和動作特性 Dimensions and operating characteristics

WS1-□Z0-F100  
WS1-□Z0-F150  
WS1-□Z0-F200



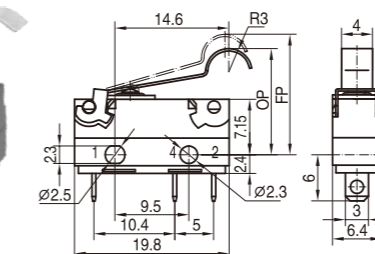
型號 Model	WS1-□Z0-F100	WS1-□Z0-F150	WS1-□Z0-F200
OF Max(N)	1.00	1.50	2.00
RF Min(N)	0.20	0.30	0.60
PT Max(mm)	0.8		
OT Min(mm)	0.4		
MD Max(mm)	0.1		
OP(mm)	8.4 ± 0.4		

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		

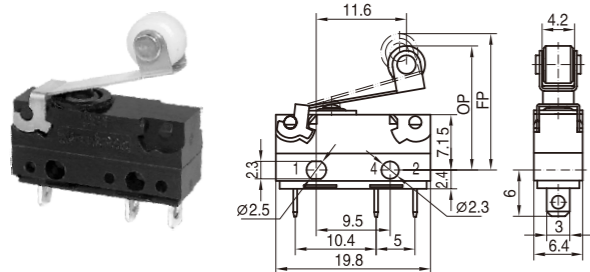
WS1-□Z6A-F100  
WS1-□Z6A-F150  
WS1-□Z6A-F200



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		

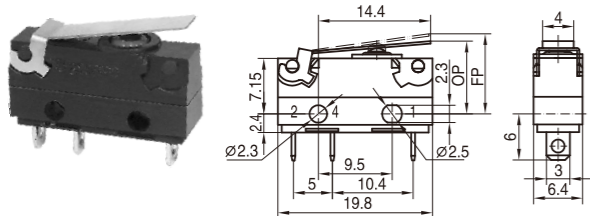
### ◆ 外形尺寸和動作特性 Dimensions and operating characteristics

WS1-□Z5-F100  
WS1-□Z5-F150  
WS1-□Z5-F200



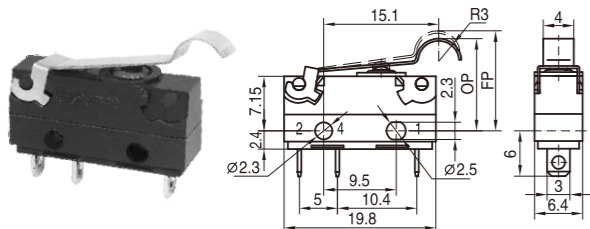
型號 Model	WS1-□Z5-F100	WS1-□Z5-F150	WS1-□Z5-F200
OF Max(N)	0.50	0.60	0.80
RF Min(N)	0.12	0.15	0.20
OT Min(mm)	1.0		
MD Max(mm)	0.8		
FP Max(mm)	18.5		
OP(mm)	16.6 ± 0.8		

WS1-□ZB3-F100  
WS1-□ZB3-F150  
WS1-□ZB3-F200



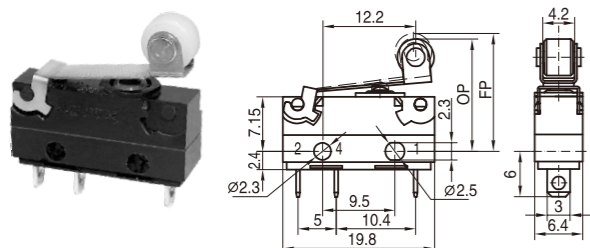
型號 Model	WS1-□ZB3-F100	WS1-□ZB3-F150	WS1-□ZB3-F200
OF Max(N)	0.70	1.05	1.40
RF Min(N)	0.20	0.30	0.40
OT Min(mm)	0.8		
MD Max(mm)	0.4		
FP Max(mm)	11.5		
OP(mm)	9.3 ± 0.5		

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

【Common use】please refer to related pages

#### ■ 注意事項 Attention items

##### (1) 關於保護構造 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.

當處於經常有水滴的狀態，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) 關於端子的接綫 Concerning terminal connecting wire

焊接時的烙鐵溫度350~400°C，焊接時間在3s之內。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 C, time in 3s. If operate temperature is too high or too long time in excess of heating, switch aging may happen.

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

Regarding the quick connect terminal, when insert 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°C下5s內進行作業。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°C, within 5s. Soldering the printed board, please pay attention to soldering dosage and soldering tin do not exceed the printed circuit board

#### 關於使用 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.

#### 關於安裝 Concerning the installation

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

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

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

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

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

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

#### 關於導線型的布線 Concerning wiring of wire type

布線時應注意不要出現外力施加于導線或從導線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.

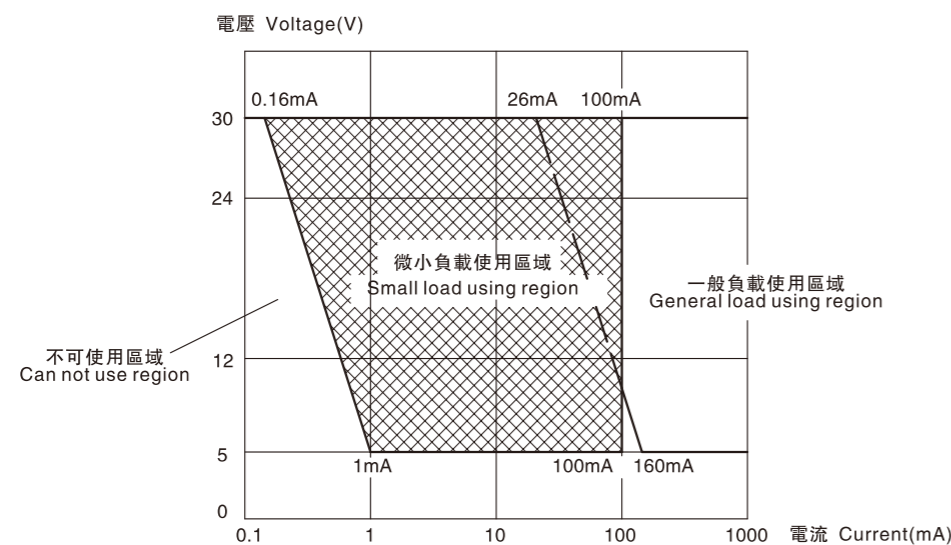
#### 關於微小負載電路中的使用 Concerning use in small load circuit

如果在開關微小負載電路中使用一般負載用開關，可能會引起接觸不良。

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

請參考下圖在使用區域的範圍內使用開關，並根據需要插入觸點保護電路。

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



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

### 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.

接線端子種類齊全，可配備各種導線。

A variety of contact terminals, provide with variety kinds of wire.

配備各種形式動臂

A variety of levers.

可在汽車、自動售貨機、冰箱、製冰機、浴室設備、熱水器、空調等有耐環境性要求的場合及戶外設備、儀器使用。

Can be used in environment resistant places application, outdoor apparatus 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
絕緣電阻 Insulation resistance		≥100MΩ (500VDC)
接觸電阻 Contact resistance		端子型 Terminal type ≤50mΩ 導線型 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、接線端與不帶電金屬件之間 Between current-carrying metal parts and Ground(case), and between each terminal and non-current-carrying metal parts.	AC1500V, 50/60Hz, 1min
抗振動 Vibration resistance		10 ~ 55Hz, 1.5mm 雙振幅 Double amplitude
抗衝擊 Shock resistance		耐久: 1000m/S <sup>2</sup> (約100G) 最大 endurance: 1000m/S <sup>2</sup> (approx 100G) max 誤動作: 300m/S <sup>2</sup> (約30G) 最大 Wrong action: 300m/S <sup>2</sup> (approx.30G) max
防觸電保護等級 Electric shock proof protection grade		I 級 class
外殼防護等級 Degrees of protection provided by enclosure		IEC IP67 (端子型的端子部位除外 Besides 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

提供安全、可靠的通斷服務，讓電器更完美

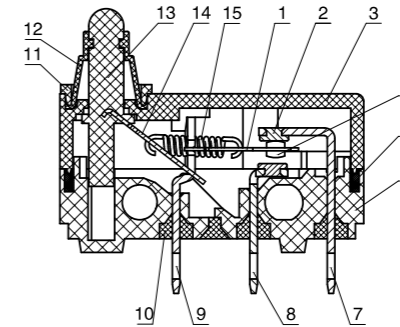
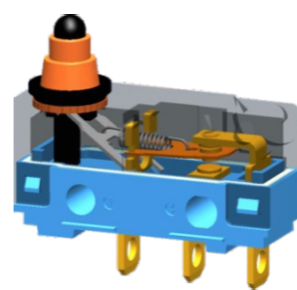
◆ 型號規格命名及含義 Model number legend and meanings

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

<p><b>1</b> 溫度等級 Degrees of temperature</p>	<p>無標記 No mark: 20T85 T:40T85</p>	<p><b>6</b> 動作力(max) Operating force</p> <p>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.</p>
<p><b>2</b> 額定值 Ratings</p>	<p>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</p>	<p><b>7</b> 按鈕規格 Plunger specs</p> <p>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</p> <p><b>8</b> 導線方向及長度 Wire direction and length</p> <p>R□:導線在按鈕遠端引出 Wire be educed at the distance of plunger L□:導線在按鈕近端引出 Wire be educed at the close of plunger D□:導線在開關下方引出 Wire be educed at the lower part of switch (□為導線長度毫米數) (□ Is the length number- "mm" of the wire)</p>
<p><b>3</b> 接觸形式 Circuit</p>	<p>Z:轉換式 SPDT T:常開(接通)式 SPST-NO D:常閉(按斷)式 SPST-NC (見說明圖 See illustration)</p>	<p><b>9</b> 防護等級 Degrees of protection provided by enclosure</p> <p>無標記 No mark: IP67 IP□□:其它等級 Other degrees</p>
<p><b>4</b> 驅動形式 Actuator forms</p>	<p>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 5:長滾輪臂 Long Roller 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</p>	<p>適用於apply to: 1)當開關使用了非標準零件如非標準端子時; When used not standard parts such as not standard terminal. 2)當顧客有特殊動作特性值或其它要求時; When customer has particular operating value or other requirements. 3)當導線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. ■ 導線顏色配置代號: 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線顏色配置代號, 則導線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</p>
<p><b>5</b> 端子類型 Terminal types</p>	<p>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:導線型 Wire type</p>	<p><b>10</b> 附加規格代號及導線顏色配置代號 Append specs code and wire color code</p>

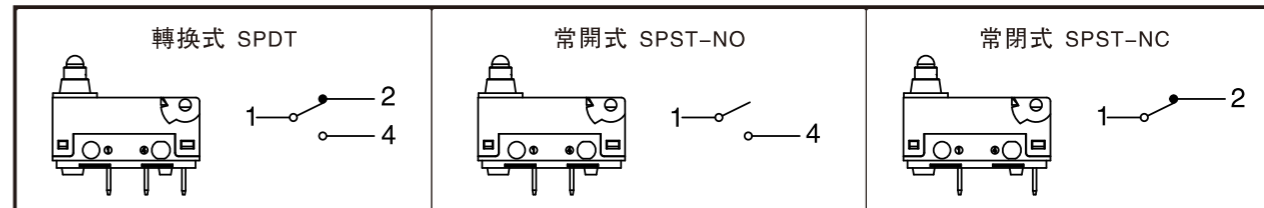
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◆ 內部構造圖 Internal configuration drawing

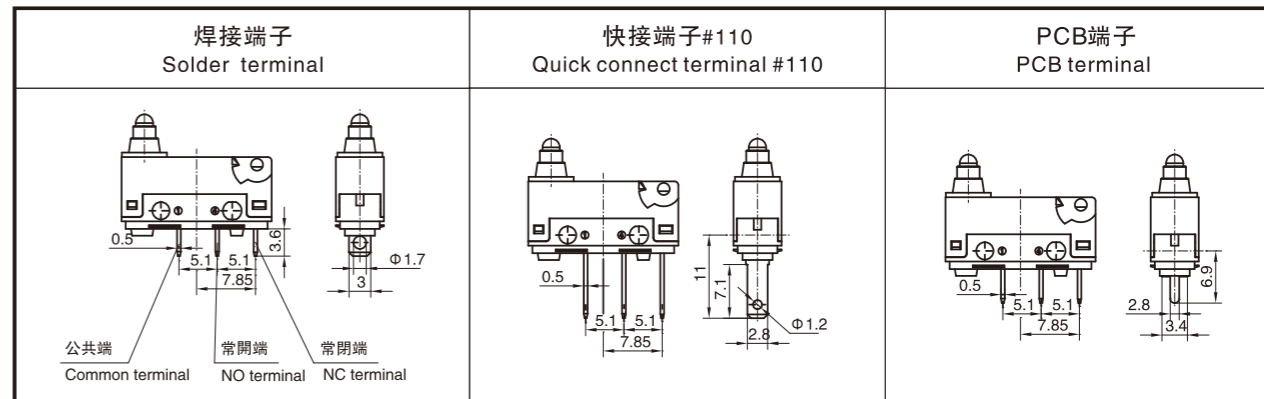


- 1: 可動片 Moving piece
- 2: 電觸點 Contact
- 3: 蓋 Cover
- 4: 電觸點 Contact
- 5: 橡膠 Rubber
- 6: 基座 Case
- 7: 常閉端子 NC terminal
- 8: 常開端子 NO terminal
- 9: 支架 Support
- 10: 環氧樹脂 Epoxlde resin
- 11: 壓環 Clasp ring
- 12: 密封圈 Hermetic loop
- 13: 按鈕 Plunger
- 14: 杠杆 Lever
- 15: 拉簧 Pull spring

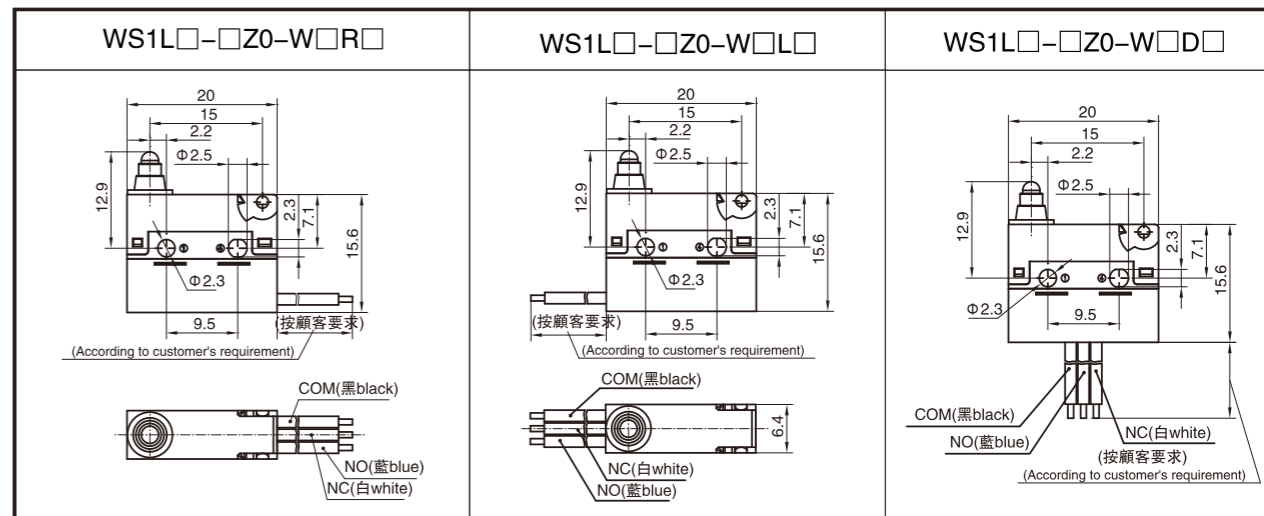
◆ 接觸形式說明圖 Circuit illustration



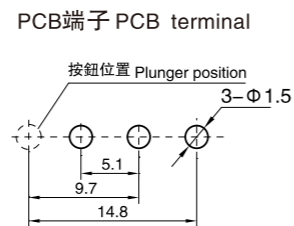
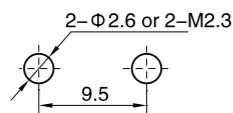
◆ 接線端尺寸 Terminal dimensions



◆ 導線型外形圖 Outline drawing of wire type

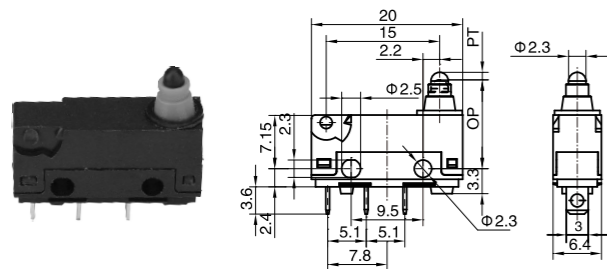






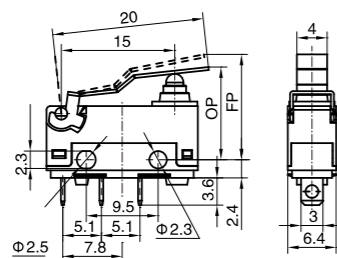
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

WS1L-□Z0-F150  
WS1L-□Z0-F200



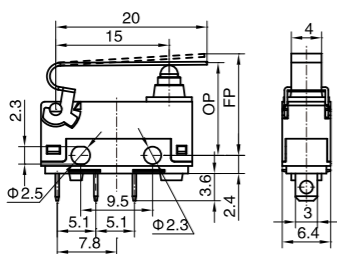
型號 Model	WS1L-□Z0-F150	WS1L-□Z0-F200
OF Max(N)	1.50	2.00
RF Min(N)	0.30	0.40
PT Max(mm)	1.6	
OT Min(mm)	1.8	
MD Max(mm)	1.9	
OP (mm)	11.7 ± 0.4	

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	

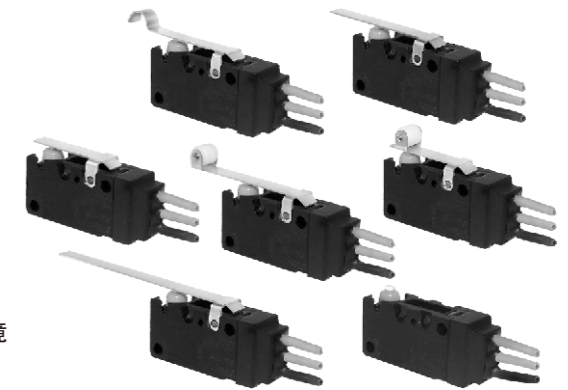
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WS2型防水開關系列 Waterproof switch series

◆ 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.
- 配備焊接端子和帶導線端子  
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 environment resistant places and application, outdoor apparatus 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
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
	帶電金屬零件與地(外殼)之間、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm 雙振幅 Double amplitude
抗衝擊 Shock resistance	耐久: 1000m/S <sup>2</sup> (約100G) 最大 endurance: 1000m/S <sup>2</sup> (approx 100G) max 誤動作: 300m/S <sup>2</sup> (約30G) 最大 Wrong action: 300m/S <sup>2</sup> (approx.30G) max
防觸電保護等級 Electric shock proof protection grade	I 級 class
外殼防護等級 Degrees of protection provided by enclosure	IEC IP67 (端子型的端子部位除外 Besides terminal part of terminal type)
壽命 Life	機械 ≥1,000,000次; Mechanical ≥1,000,000 cycles 電氣 ≥10,000次; Electrical ≥10,000 cycles
安全認證 Safety approvals	UL、CUL、ENEC、DEMKO、CE、CQC

提供安全、可靠的通斷服務，讓電器更完美

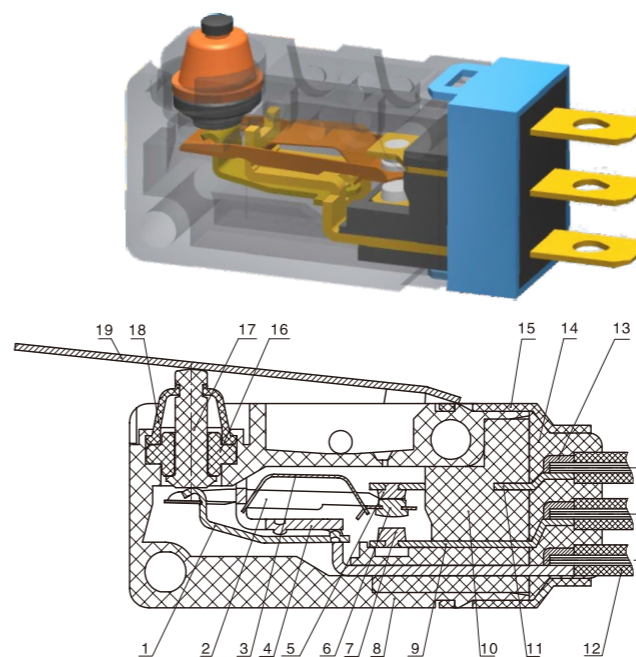
◆ 型號規格命名及含義 Model number legend and meanings

WS2 □-□□□-□□□-□□-□  
1 2 3 4 5 6 7 8 9 10

<b>1</b> 溫度等級 Degrees of temperature	無標記 No mark: T85 T:25T125	<b>7</b> 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
<b>2</b> 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	<b>8</b> 導線長度 Wire length	用毫米數表示 Indicate with number- "mm"
<b>3</b> 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)	<b>9</b> 防護等級 Degrees of protection provided by enclosure	無標記 No mark: IP67 IP□□:其它等級 Other degrees
<b>4</b> 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.	<b>10</b> 附加規格代號及 導線顏色配置代號 Append specs code and wire color code	適用於apply to: 1)當開關使用了非標準零件如非標準端子時; When used not standard parts such as not standard terminal. 2)當顧客有特殊動作特性值或其它要求時; When customer has particular operating value or other requirements. 3)當導線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。 If there is no additional numbers, the place is vacant. ■ 導線顏色配置代號: 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 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線顏色配置代號, 則導線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: O2BWR
<b>5</b> 端子類型 Terminal types	F:端子型 Terminal type W:導線型 Wire type Y:非標準端子 Not standard terminal		
<b>6</b> 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.		

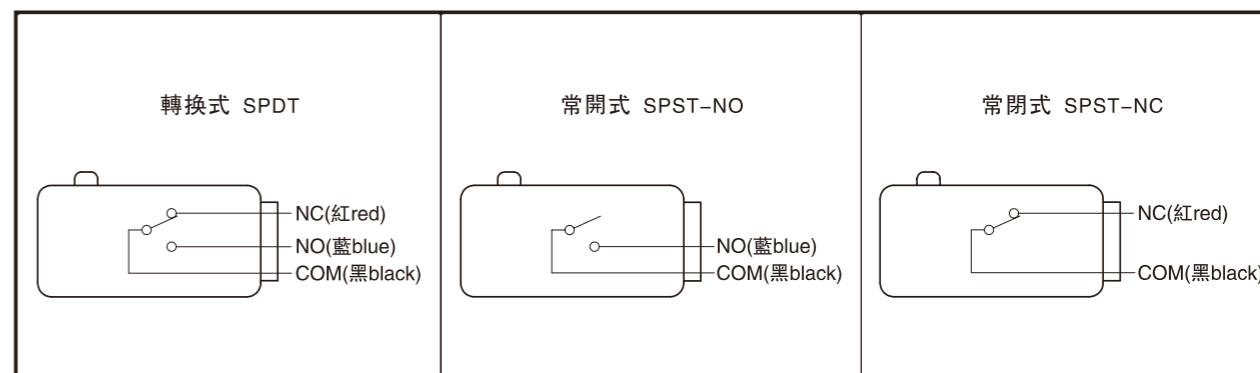
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◆ 內部構造圖 Internal configuration drawing

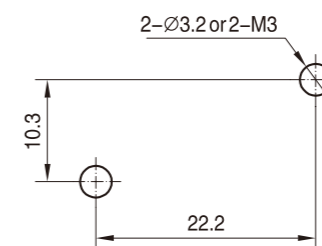


- 1: 杠杆 Lever
- 2: 可動片 Moving piece
- 3: 簧片 Spring sheet
- 4: 支架 Support
- 5: 電觸點 Contact
- 6: 電觸點 Contact
- 7: 電觸點 Contact
- 8: 底座 Case
- 9: 端子 Terminal
- 10: 固定塊 Fixed piece
- 11: 端子 Terminal
- 12: 導線 Wire
- 13: 焊錫 Soldering tin
- 14: 環氧樹脂 Epoxy resin
- 15: 護罩 Cover
- 16: 護套 Annulus
- 17: 按鈕 Plunger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

◆ 接觸形式說明圖 Circuit illustration

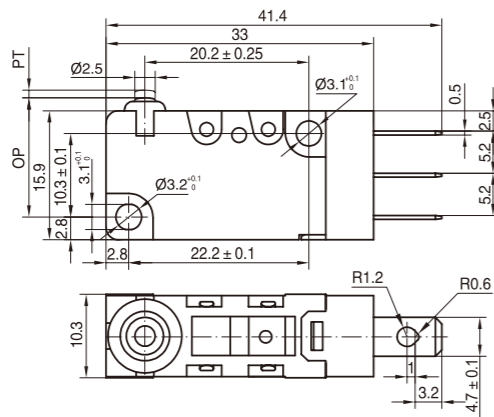
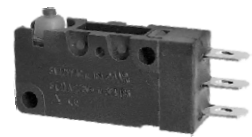


◆ 安裝孔尺寸 Mounting hole dimensions



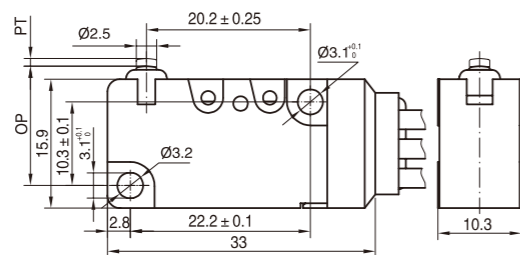
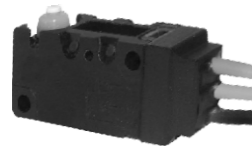
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

■ 端子型 Terminal type  
WS2-□Z0-F200-□



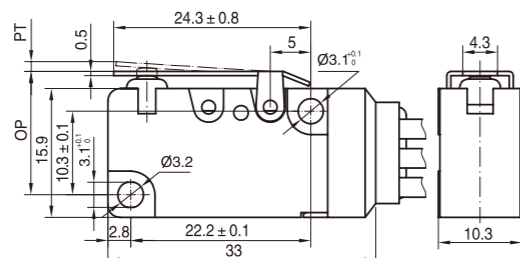
OF Max(N)	2.00
RF Min(N)	0.30
PT Max(mm)	1.2
OT Min(mm)	1.0
MD Max(mm)	0.4
OP(mm)	14.7 ± 0.4

■ 導線型 Wire type  
WS2-□Z0-W200-□



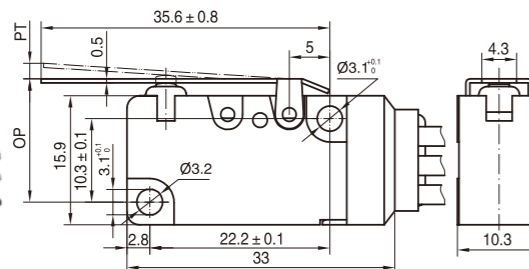
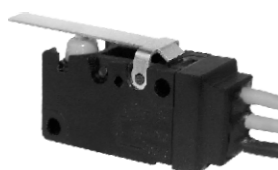
OF Max(N)	2.00
RF Min(N)	0.30
PT Max(mm)	1.2
OT Min(mm)	1.0
MD Max(mm)	0.4
OP(mm)	14.7 ± 0.4

WS2-□Z1-W200-□



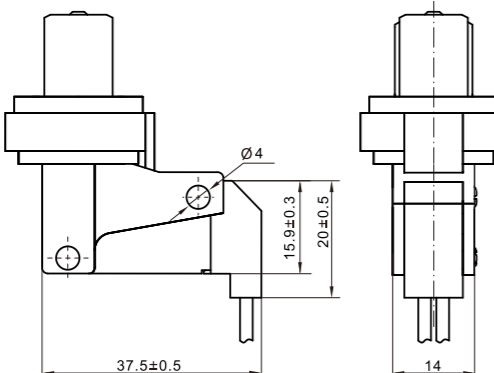
OF Max(N)	2.00
RF Min(N)	0.20
PT Max(mm)	1.6
OT Min(mm)	0.8
MD Max(mm)	0.5
OP(mm)	15.2 ± 0.5

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



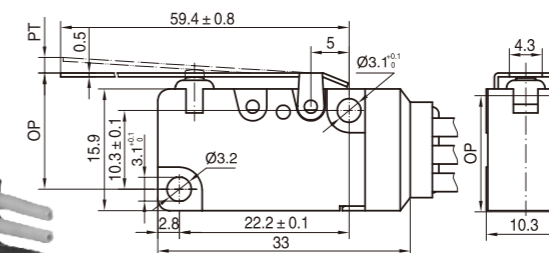
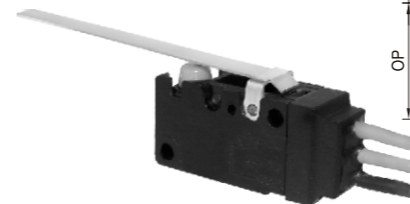
OF Max(N)	1.3
RF Min(N)	0.1
PT Max(mm)	XXX
OT Min(mm)	XXX
MD Max(mm)	0.4
OP(mm)	15.1±0.8

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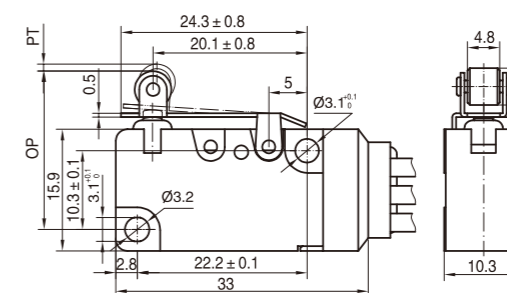
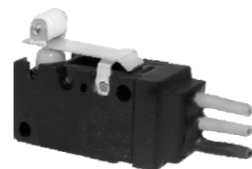
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

WS2-□Z2-W200-□



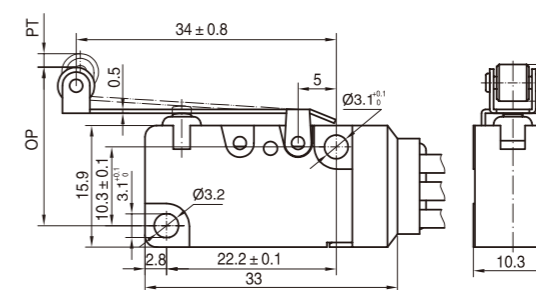
OF Max(N)	0.60
RF Min(N)	0.05
PT Max(mm)	9.0
OT Min(mm)	3.2
MD Max(mm)	2.0
OP(mm)	15.2 ± 2.6

WS2-□Z4-W200-□



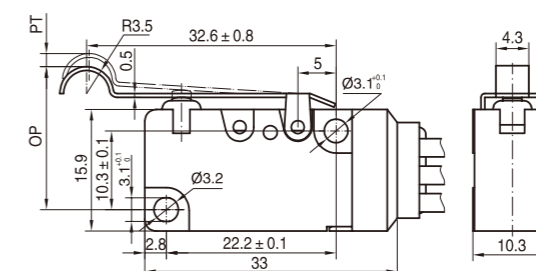
OF Max(N)	2.25
RF Min(N)	0.20
PT Max(mm)	1.6
OT Min(mm)	0.8
MD Max(mm)	0.5
OP(mm)	20.7 ± 0.6

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，未注公差為 ± 0.4mm。 Note: above dimension, general tolerance: ± 0.4mm.

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## ◆ 請正確使用 Please use it correctly

【共通注意事項】請參閱相關頁

【Common use】please refer to related pages

## ■ 注意事項 Attention items

## (1) 關於保護構造 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) 關於油污、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.

## ■ 關於使用 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.

## ■ 關於安裝 Concerning installation

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

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

(2) 安裝時，使用2個M3螺釘，用平墊圈、彈簧墊圈等緊固，並請使用0.4~0.6N·m的緊固轉矩。

When installing, please use 2 M3 screws, then tight it with flat washer, spring washer, and also tight with 0.4~0.6N·m torque.

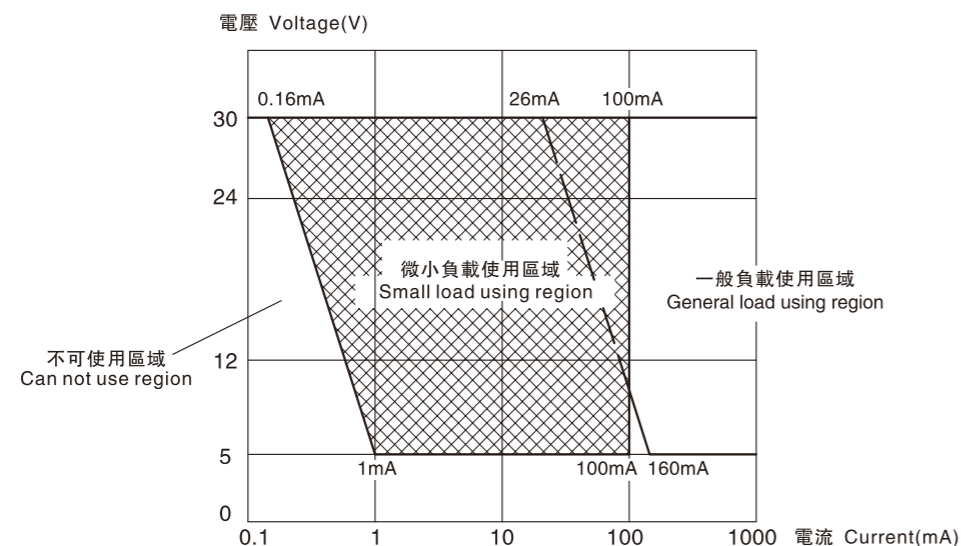
## ■ 關於微小負載電路中的使用 Concerning use in small load circuit

如果在開關微小負載電路中使用一般負載用開關，可能會引起接觸不良。

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

請參考下圖在使用區域的範圍內使用開關，並根據需要插入觸點保護電路。

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



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## 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端子和帶導線端子

Provide with solder terminal, PCB terminal and with 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 environment resistant places and equipment, apparatus outdoors such as automobile, automat, refrigerator, ice machine, bath equipment, water heater and air condition 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
絕緣電阻 Insulation resistance		≥ 100MΩ (500VDC)
接觸電阻 Contact resistance		≤ 50mΩ (不帶導線型 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/s <sup>2</sup> (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 Degrees of protection provided by enclosure		IEC IP50 (端子型 Terminal type) IEC IP67 (導線型 Wire leads 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

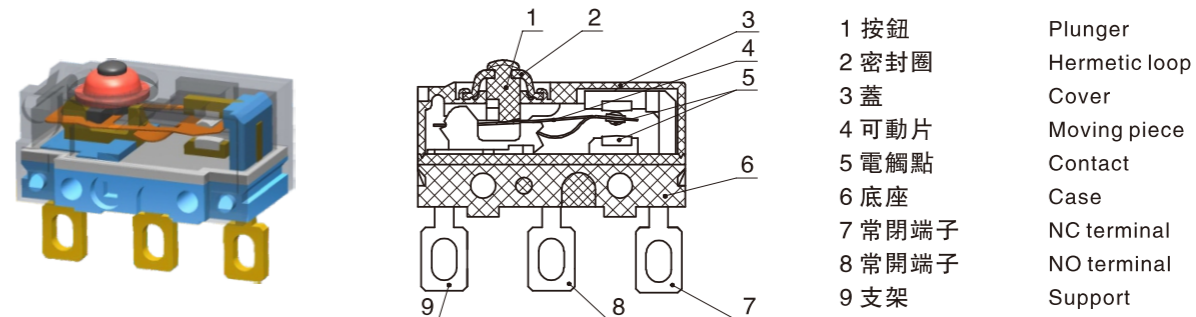
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◆ 型號規格命名及含義 Model number legend and meanings

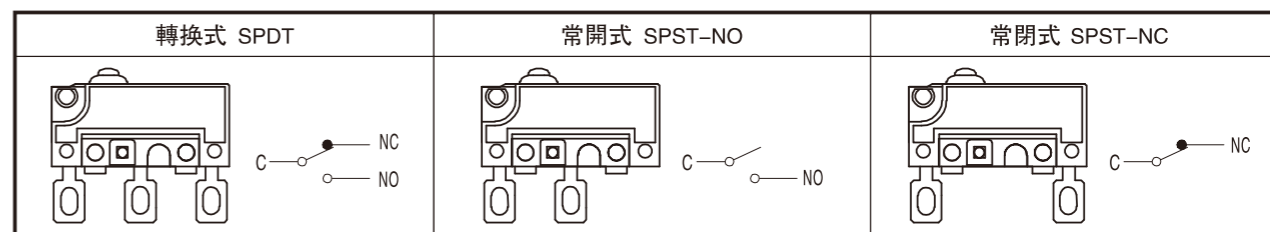
WS3 □-□□□-□□□-□□-(□)  
1 2 3 4 5 6 7 8 9 10

<p><b>1</b> 溫度等級 Degrees of temperature</p>	<p>無標記 No mark: 40T85</p>	<p><b>7</b> 安裝孔尺寸代號 Mounting hole dimension code</p>	<p>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 Right side fixed pin type D:雙側面固定銷 Both sides fixed pin type</p>
<p><b>2</b> 額定值 Ratings</p>	<p>無標記No mark: 2GPA125V/250VAC 2RA125/250VAC 3A30VDC WS3-F: 0.1GPA125V/250VAC 0.1RA125/250VAC 5mA30VDC</p>	<p><b>8</b> 導線長度 Wire length</p>	<p>用毫米數表示 Indicate with number- "mm"</p>
<p><b>3</b> 接觸形式 Circuit</p>	<p>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)</p>	<p><b>9</b> 防護等級 Degrees of protection provided by enclosure</p>	<p>無標記 No mark: IP50(端子型terminal type) IP67(導線型 wire leads type) IP□□: 其它等級 Other class</p>
<p><b>4</b> 驅動形式 Actuator forms</p>	<p>0:無動臂 No lever 3:直動臂 Straight lever 5:滾輪動臂 Roller 6:弧形動臂 Arc lever 8:葉形動臂 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.</p>	<p><b>10</b> 附加規格代號及 導線顏色配置代號 Append specs code and wire color code</p>	<p>適用於apply to: 1) 當開關使用了非標準零件如非標準端子時; When used not standard parts such as not standard terminal. 2) 當顧客有特殊動作特性值或其它要求時; When customer has particular operating value or other requirements. 3) 當導線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. ■ 導線顏色配置代號: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 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線顏色配置代號, 則導線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</p>
<p><b>5</b> 端子類型 Terminal type</p>	<p>F:焊接端子 Solder terminal P:PCB端子 PCB terminal B:底部導線型 Bottom wire leads type L:左面導線型 Left side wire leads type R:右面導線型 Right side wire leads type Y:非標準端子 Not standard terminal</p>		
<p><b>6</b> 動作力(max) Operating force</p>	<p>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.</p>		

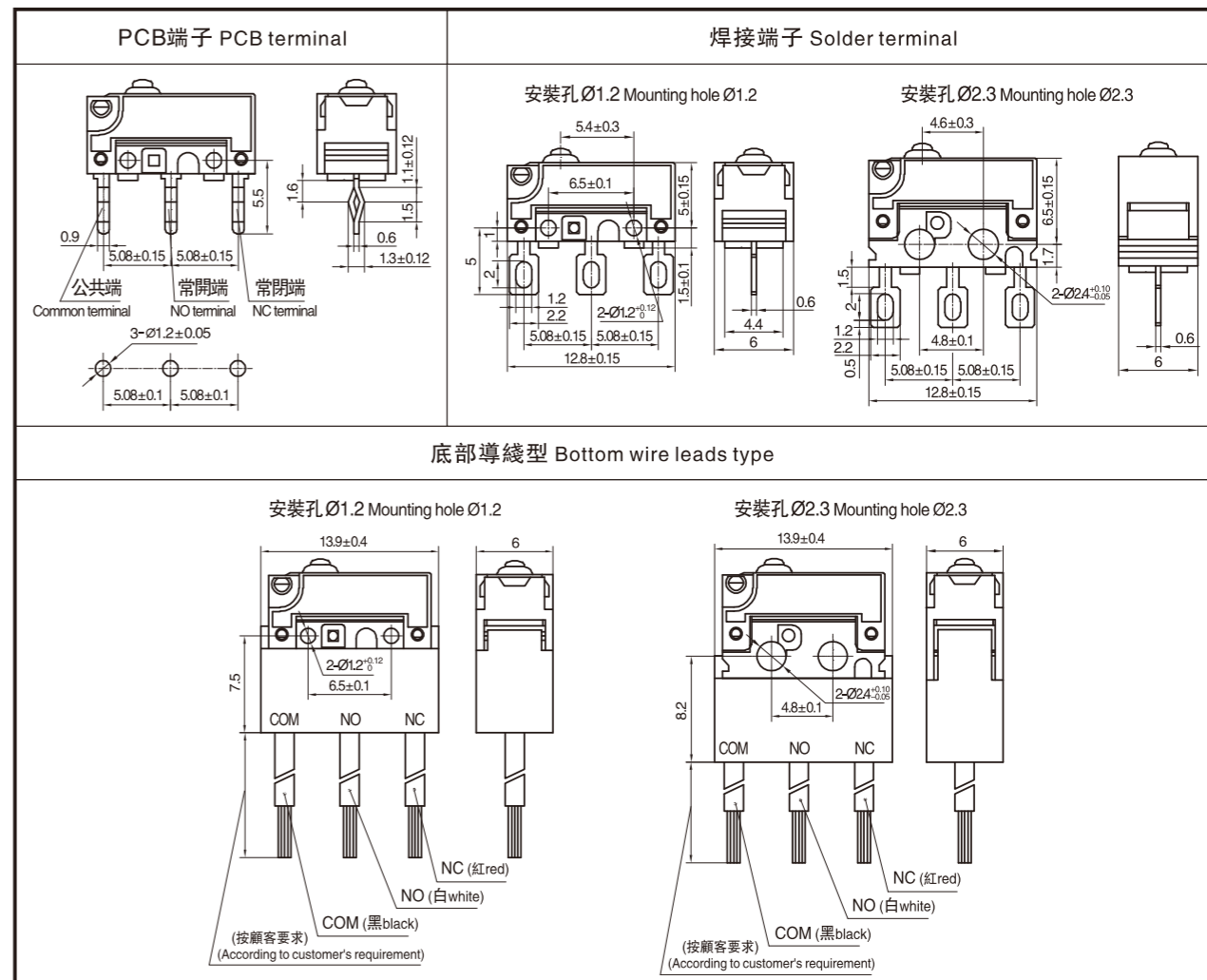
◆ 內部構造圖 Internal configuration drawing



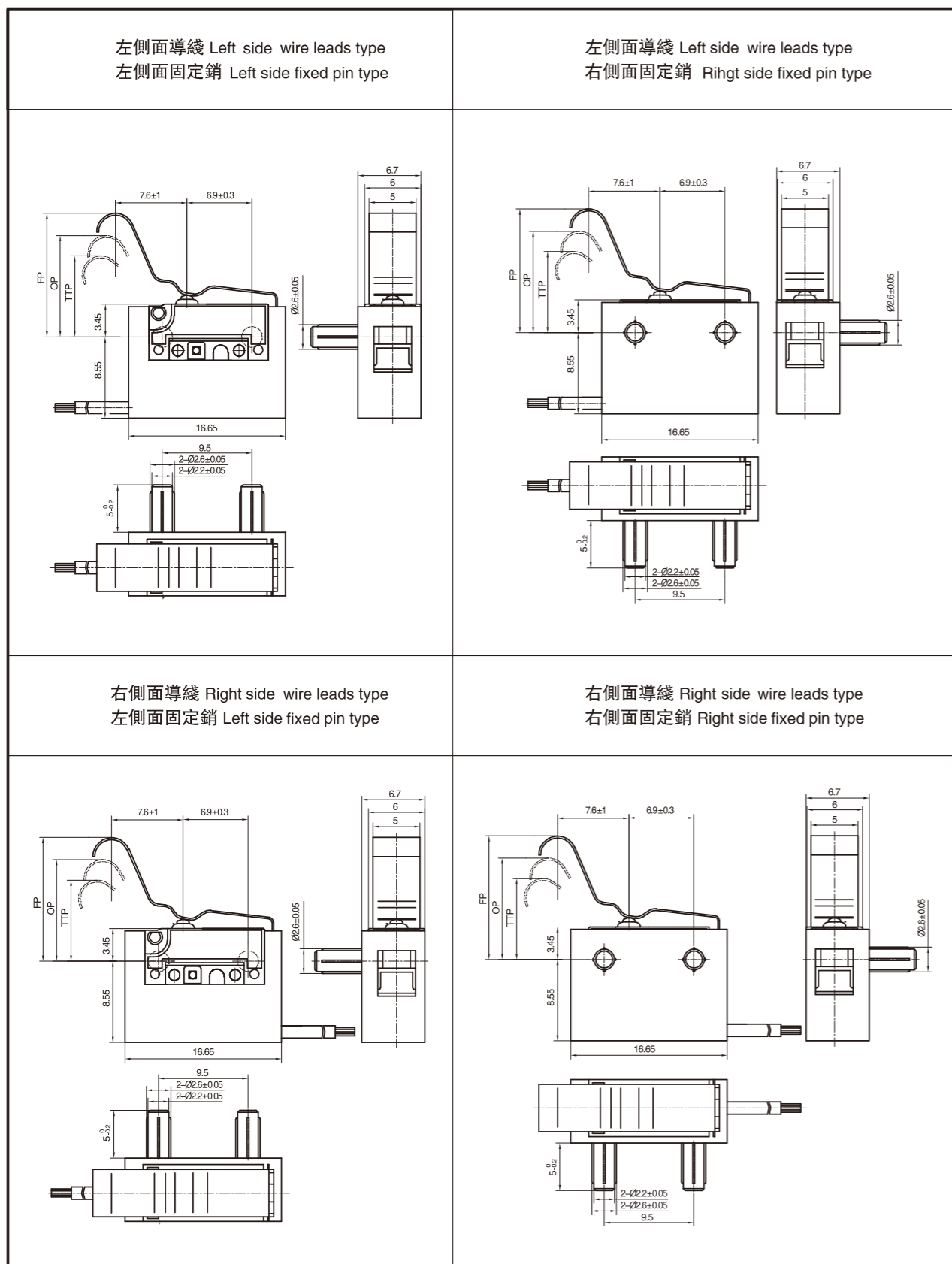
◆ 接觸形式說明圖 Circuit illustration



◆ 端子類型及安裝尺寸說明圖 Terminal types and mounting dimension illustration

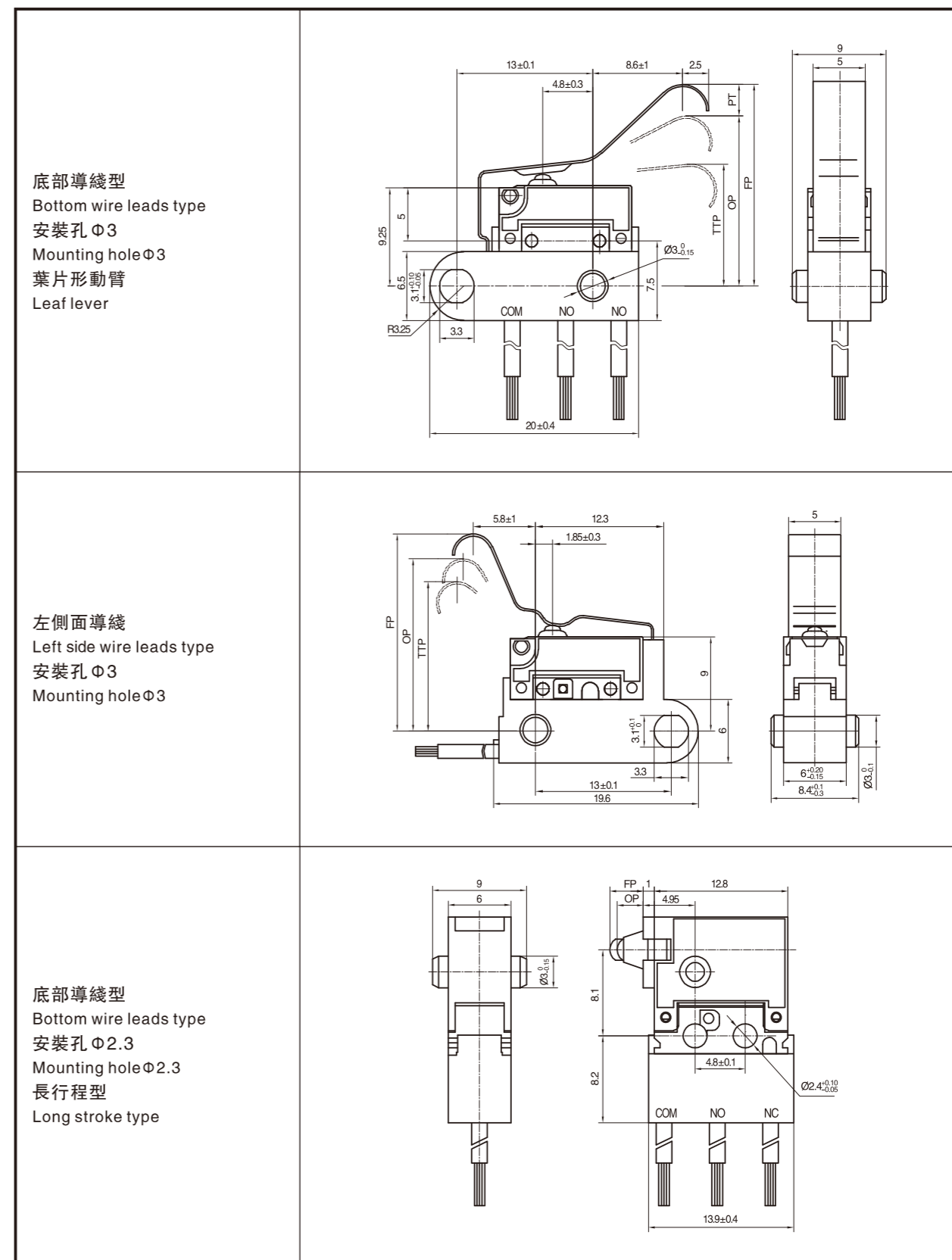


◆ 端子類型及安裝尺寸說明圖 Terminal types and mounting dimension illustration



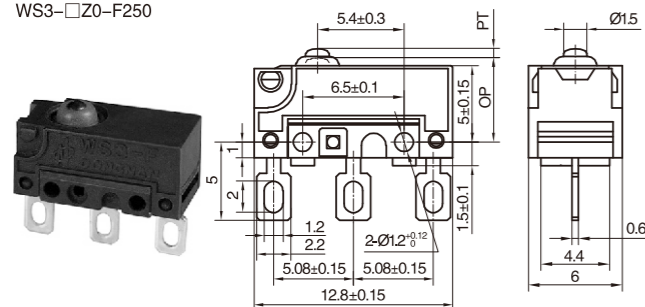
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◆ 端子類型及安裝尺寸說明圖 Terminal types and mounting dimension illustration



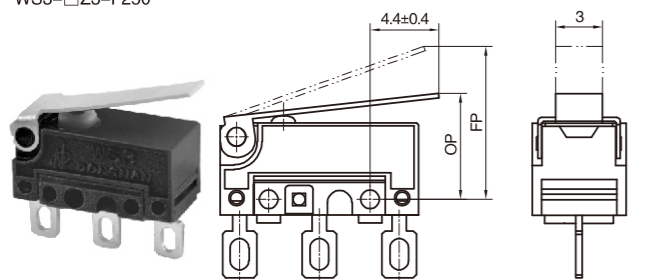
### ◆ 外形尺寸和動作特性 Dimensions and operating characteristics

WS3-□Z0-F150  
WS3-□Z0-F200  
WS3-□Z0-F250



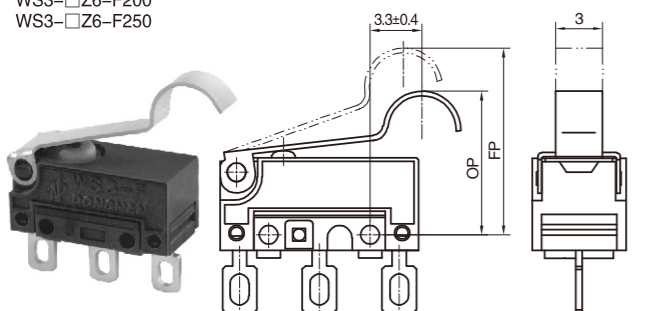
型號 Model	WS3-□Z0-F150	WS3-□Z0-F200	WS3-□Z0-F250
OF Max(N)	1.50	2.00	2.50
RF Min(N)	0.10	0.20	0.30
PT Max(mm)	0.6		
OT Min(mm)	0.2		
MD Max(mm)	0.2		
OP(mm)	5.5 ± 0.3		

WS3-□Z3-F150  
WS3-□Z3-F200  
WS3-□Z3-F250



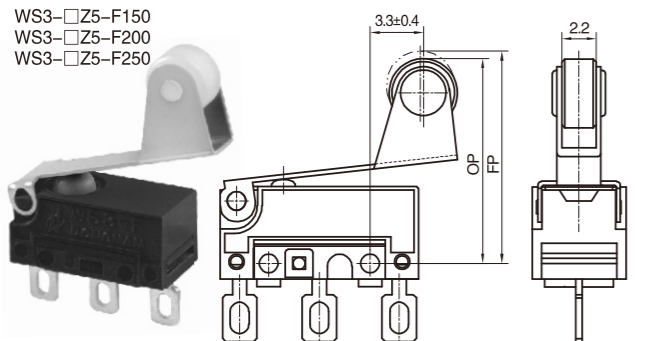
型號 Model	WS3-□Z3-F150	WS3-□Z3-F200	WS3-□Z3-F250
OF Max(N)	0.50	0.80	1.00
RF Min(N)	0.05	0.10	0.15
OT Min(mm)	0.5		
MD Max(mm)	0.6		
FP Max(mm)	11.0		
OP(mm)	6.8 ± 1.2		

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

【Common use】please refer to related pages

#### ■ 注意事項 Attention items

##### (1) 關於保護構造 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) 關於油污、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.

#### ■ 關於使用 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.

#### ■ 關於安裝 Concerning installation

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

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

(2) 安裝時，使用2個M3螺釘，用平墊圈、彈簧墊圈等緊固，並請使用0.4~0.6N·m的緊固轉矩。

When installing, please use 2 M3 screws, then tight it with flat washer, spring washer, and also tight with 0.4~0.6N·m torque.

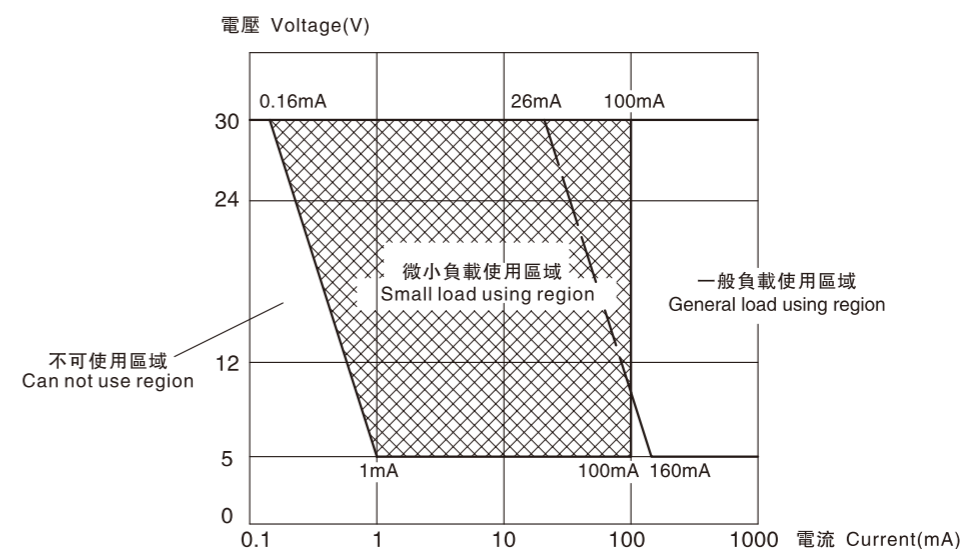
#### ■ 關於微小負載電路中的使用 Concerning use in small load circuit

如果在開關微小負載電路中使用一般負載用開關，可能會引起接觸不良。

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

請參考下圖在使用區域的範圍內使用開關，並根據需要插入觸點保護電路。

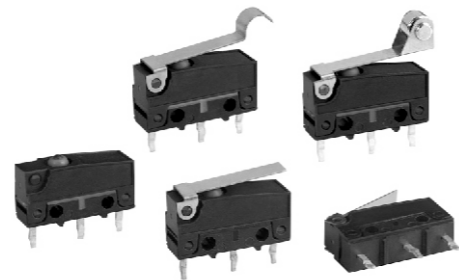
Please refer to the chart below, use switch within using region, and insert contact to protect circuit according to the needs.



## 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端子和帶導線端子  
Provide with solder terminal, PCB terminal and with wire terminal.
- 配備各種形式動臂 A variety of levers
- 可在汽車、家用電器等有耐環境性要求的場合使用。  
It 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	
絕緣電阻 Insulation resistance	≥100MΩ (500VDC)	
接觸電阻 Contact resistance	≤50mΩ (不帶導線型 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/s <sup>2</sup> (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 Degrees of protection provided by enclosure	IEC IP50 (端子型 Terminal type) IEC IP67 (導線型 Wire leads 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	

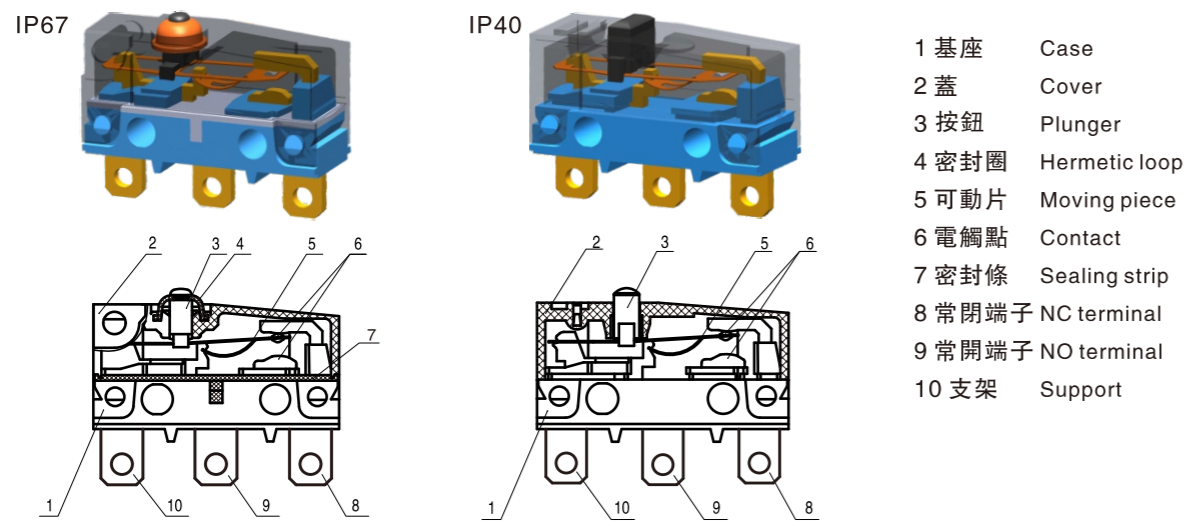
### ◆ 型號規格命名及含義 Model number legend and meanings

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

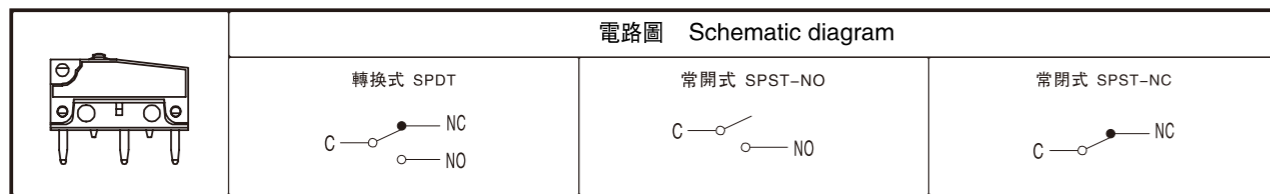
<b>1</b> 溫度等級 Degrees of temperature	無標記 No mark: 40T85	<b>6</b> 動作力(max) Operating force	100: 1.0N 160: 1.6N 注: 若是非標準動作力, 用此動作力上限值表示。 Note: if it is not standard operating force, indicate with the upper limit.
<b>2</b> 額定值 Ratings	無標記 No mark: 3GPA125V/250VAC 3RA125/250VAC 3(1)A125/250VAC 3A30VDC WS4-A: 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	<b>7</b> 導線型出線方向 Wire type wire direction	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
<b>3</b> 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)	<b>8</b> 導線長度 Wire length	用毫米數表示 Indicate with number- "mm"
<b>4</b> 驅動形式 Actuator forms	0: 無動臂 No lever 3: 直動臂 Straight lever 5: 滾輪動臂 Roller 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.	<b>9</b> 防護等級 Degrees of protection provided by enclosure	無標記 No mark: IP50 (端子型 terminal type) IP67 (導線型 wire leads type) IP□□: 其它等級 Other class
<b>5</b> 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 terminal No. 2 L:左側面端子 Left side terminal R:右側面端子 Right side terminal W:導線型 wire type	<b>10</b> 附加規格代號及 導線顏色配置代號 Append specs code and wire color code	適用於 apply to: 1) 當開關使用了非標準零件如非標準端子時; When used not standard parts such as not standard terminal. 2) 當顧客有特殊動作特性值或其它要求時; When customer has particular operating value or other requirements. 3) 當導線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. ■ 導線顏色配置代號: 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 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線顏色配置代號, 則導線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



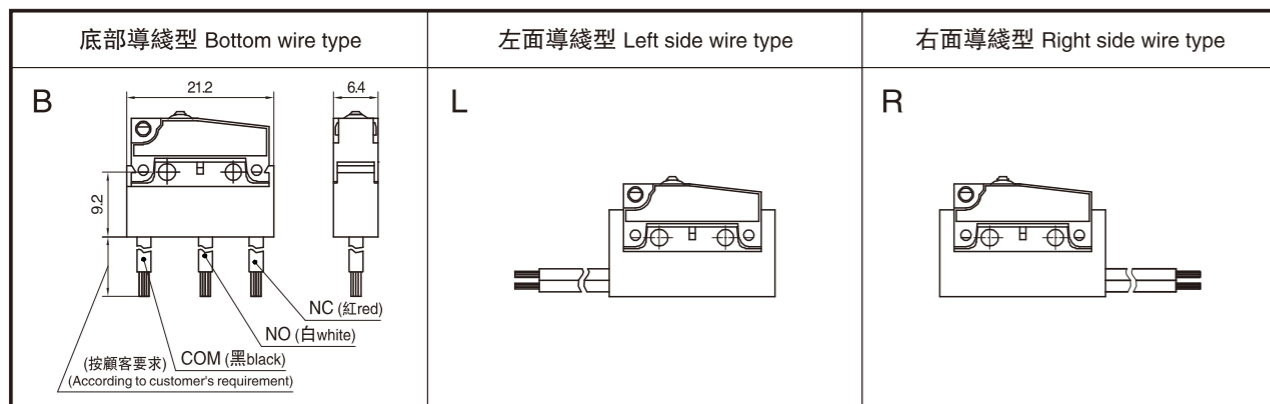
◆ 內部構造圖 Internal configuration drawing



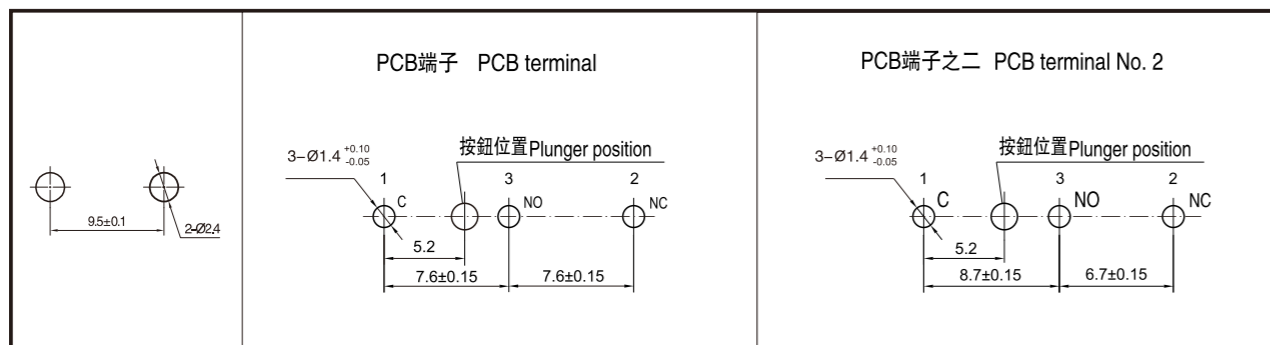
◆ 接觸形式說明圖 Circuit illustration



◆ 導線型外形圖 Outline drawing of wire type

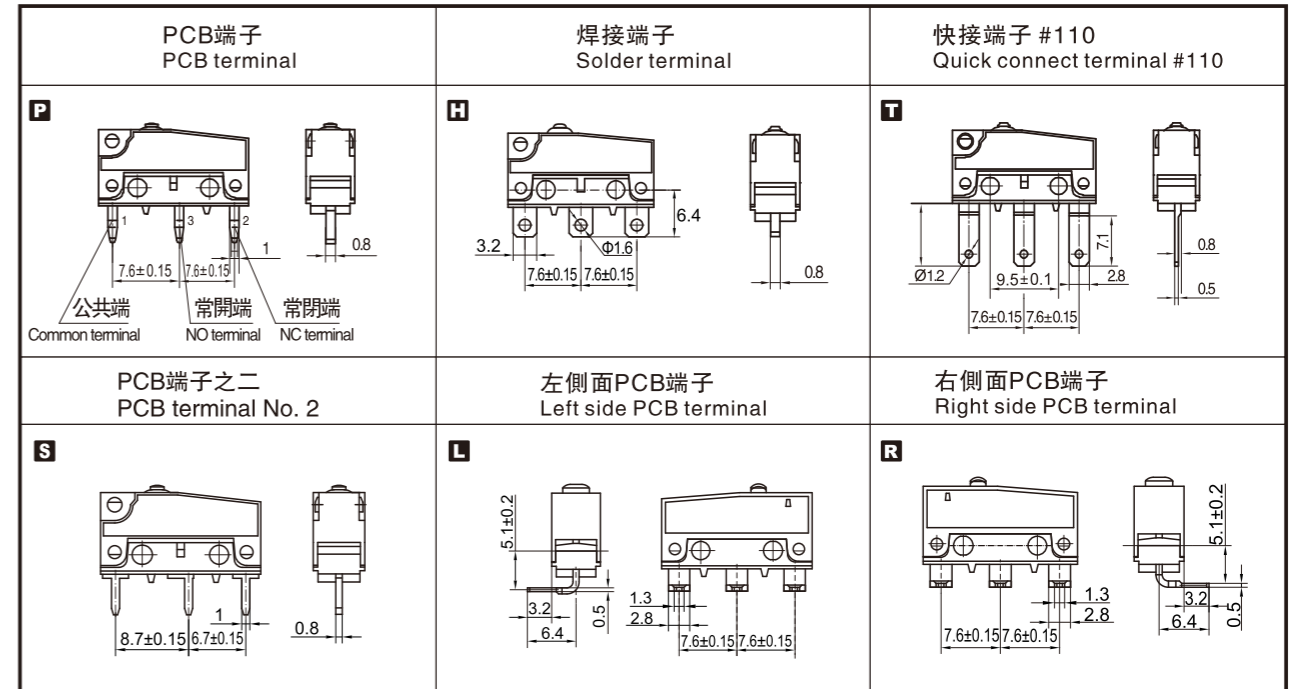


◆ 安裝孔尺寸 Mounting hole dimensions



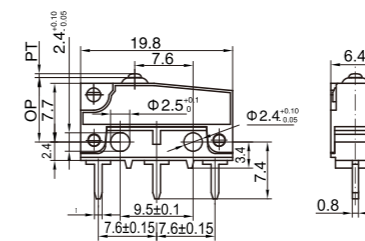
DONGNAN provide you professional micro switch solutions.

◆ 接線端尺寸 Terminal dimensions



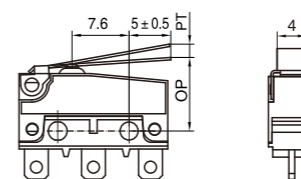
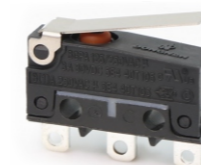
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

WS4-□Z0-P100  
WS4-□Z0-P160



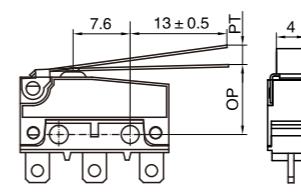
型號 Model	WS4-□Z0-P100	WS4-□Z0-P160
OF Max(N)	1.00	1.60
RF Min(N)	0.20	0.30
PT Max(mm)	0.6	
OT Min(mm)	0.4	
MD Max(mm)	0.1	
OP(mm)	8.4 ± 0.3	

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	

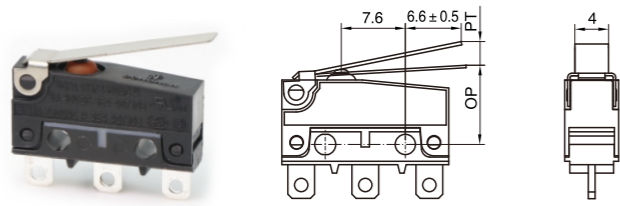
WS4-□Z2-H100  
WS4-□Z2-H160



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	

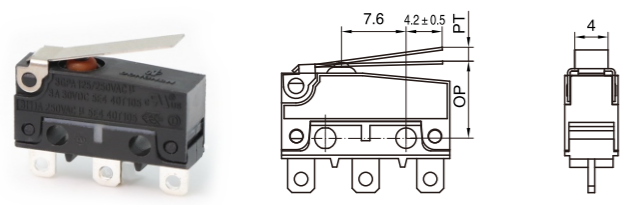
### ◆ 外形尺寸和動作特性 Dimensions and operating characteristics

WS4-□ZB-H100  
WS4-□ZB-H160



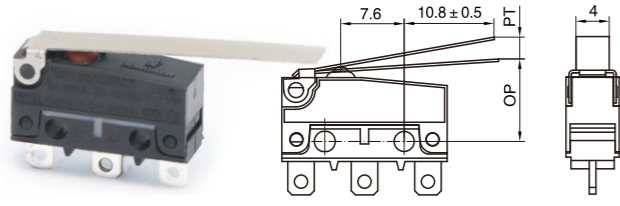
型號 Model	WS4-□ZB-H100	WS4-□ZB-H160
OF Max(N)	0.50	0.60
RF Min(N)	0.05	0.10
OT Min(mm)	0.8	
MD Max(mm)	0.5	
FP Max(mm)	13.0	
OP(mm)	10.0±1	

WS4-□ZH-H100  
WS4-□ZH-H160



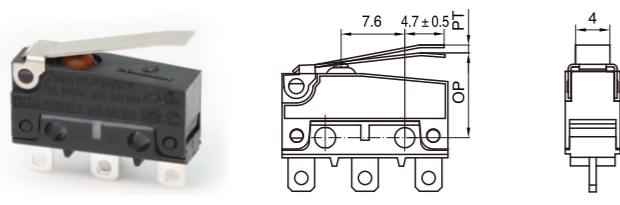
型號 Model	WS4-□ZH-H100	WS4-□ZH-H160
OF Max(N)	0.50	0.60
RF Min(N)	0.05	0.10
OT Min(mm)	0.8	
MD Max(mm)	0.5	
FP Max(mm)	12.0	
OP(mm)	9.4 ± 0.8	

WS4-□ZJ-H100  
WS4-□ZJ-H160



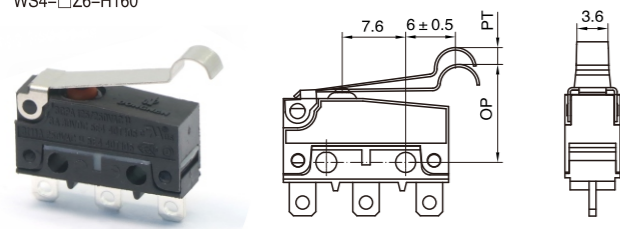
型號 Model	WS4-□ZJ-H100	WS4-□ZJ-H160
OF Max(N)	0.50	0.60
RF Min(N)	0.05	0.10
OT Min(mm)	0.8	
MD Max(mm)	0.5	
FP Max(mm)	13.5	
OP(mm)	9.9 ± 0.7	

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.
- 接線端子種類齊全，可配備各種導線。  
A variety of contact terminals, provide with variety kinds of wires.
- 配備各種形式動臂  
A variety 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戶外設備、儀器中使用。  
It can be used in automobiles, home appliances, industrial control equipment and other places which haws environmental protection requirements, and outdoor equipments and instruments.



#### ◆ 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
絕緣電阻 Insulation resistance	≥100MΩ (500VDC)
接觸電阻 Contact resistance	端子型Terminal type ≤50mΩ 導線型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
	帶電金屬零件與地(外殼)之間、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm雙振幅 double amplitude
抗衝擊 Shock resistance	耐久endurance: 1000m/s <sup>2</sup> (約100G approx.100G)max 誤動作Wrong action:300m/ s <sup>2</sup> (約30G approx.30G)max
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 (端子型的端子部位除外Besides terminal part of terminal type) 或其它等級Or other grades
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

<b>1</b> 溫度等級 Degree of temperature	無標記No mark: 40T130	<b>7</b> 安裝構造 Mounting construction	A:短定位銷(雙面各1); short 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 each 2 for double sides 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; each 2 for double sides (外形 II 用于WS5-30) each 2 for double sides CR:外形 II 右固定銷; each 2 for double sides (外形 II 用于WS5-30) each 2 for double sides DL:外形 II 左定位銷; each 2 for double sides (外形 II 用于WS5-30) each 2 for double sides DR:外形 II 右定位銷; each 2 for double sides (外形 II 用于WS5-30) each 2 for double sides CW:外形 II 無孔無銷; each 2 for double sides (外形 II 用于WS5-30) each 2 for double sides E:外形 II M3螺釘固定; each 2 for double sides (外形 II 用于WS5-30) each 2 for double sides DD:外形 II 雙面各2定位銷; each 2 for double sides (外形 II 用于WS5-30) each 2 for double sides FL:外形 III 左固定銷; each 2 for double sides (外形 III 用于WS5-40) each 2 for double sides 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 (待補英文)
<b>2</b> 額定值 Ratings	無標記No mark: 0.1A48VDC 125/250VAC; 3A 12VDC		
<b>3</b> 接觸形式 Circuit	Z:轉換式SPDT T:常開(接通)式SPST-NO D:常閉(按斷)式SPST-NC (見說明圖See illustration)		
<b>4</b> 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) 若動臂為內安裝式, 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.		
<b>5</b> 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Left side PCB PL:左側面PCB端子Left side PCB terminal PR:右側面PCB端子Right side PCB terminal B:底部導線型Bottom wire type L:左面導線型(左右的定義見圖示) Left side wire type (definition of right and left is shown in diagram) R:右面導線型Right side wire type Y:非標準端子not standard terminal		
<b>6</b> 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.		
		<b>8</b> 導線型端子的導線長度(毫米數) Wire length of wire type terminal (mm)	非導線型該位置空缺 Vacant for non-wire type
		<b>9</b> 防護等級 Degrees protection provided by enclosure	無標記No mark: IP67 (端子型,端子處除外terminal type, Except terminals) IP67 (導線型 wire leads type) IP□□: 其它等級 Other class

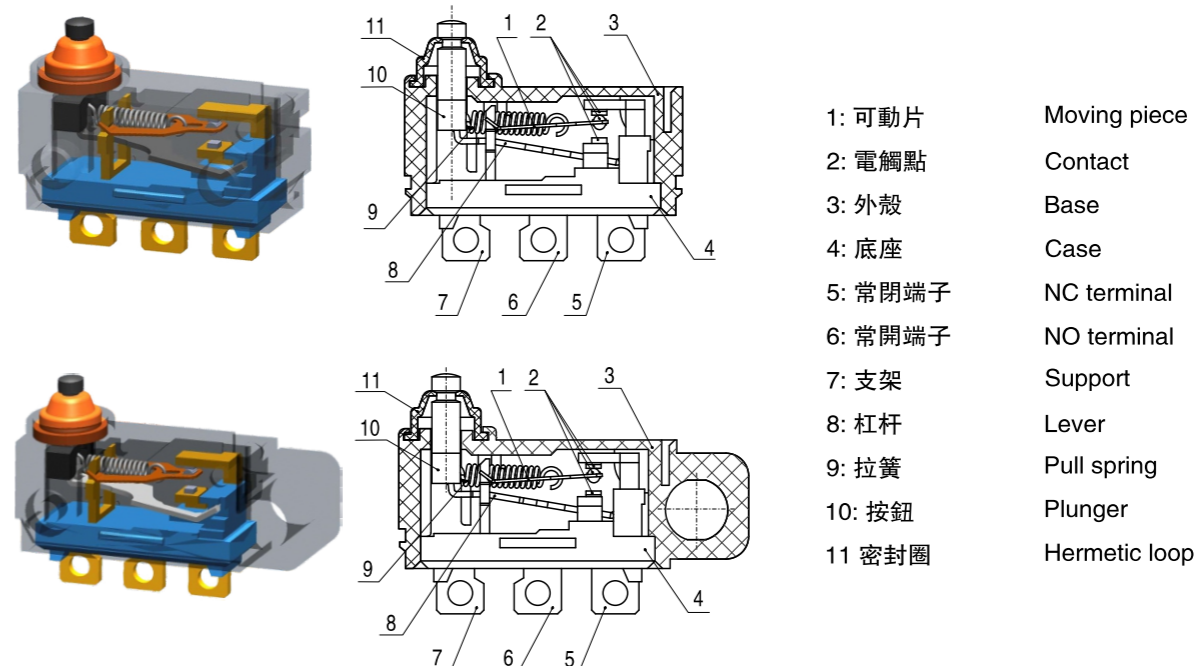
◆ 型號規格命名及含義 Model number legend and meanings

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

<b>10</b> 附加規格代號及導線顏色配置代號 Degree protection provided by enclosure	適用於apply to: 1) 當開關使用了非標準零件如非標準端子時; When used not standard parts such as not standard terminal. 2) 當顧客有特殊動作特性值或其它要求時; When customer has particular operating value or other requirements. 3) 當導線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. ■ 導線顏色配置代號: 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)。	<b>10</b> 附加規格代號及導線顏色配置代號 Degree protection provided by enclosure	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線顏色配置代號, 則導線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 ■ 導線型開關的引線顏色默認配置規定如下Wire color of 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
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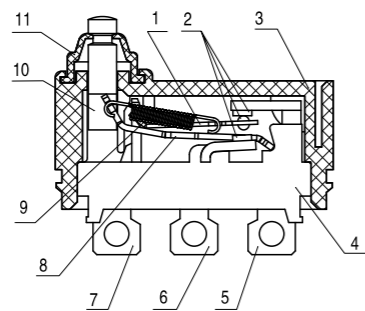
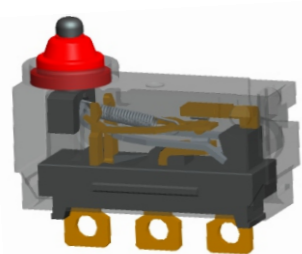
◆ 內部構造圖 Internal configuration drawing

WS5 第一代基本型

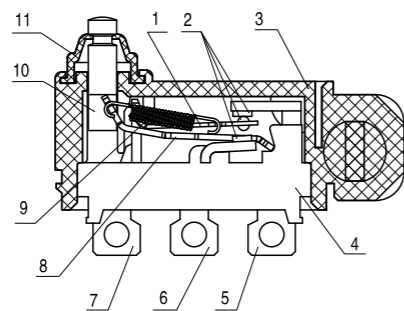
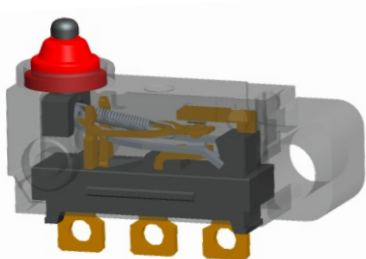


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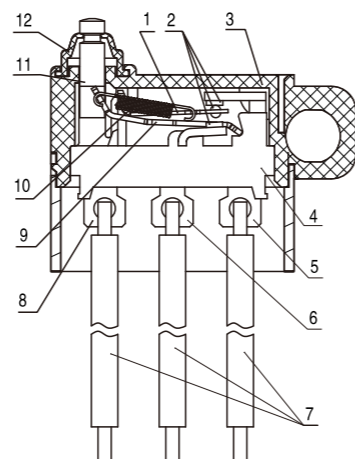
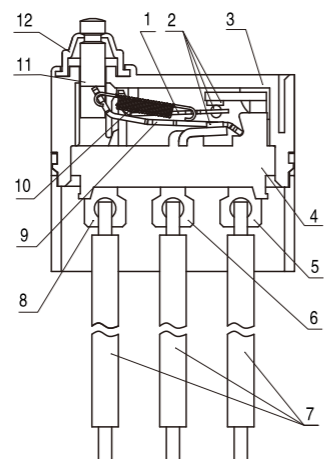
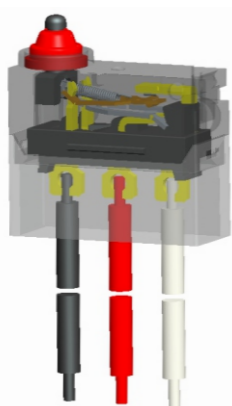
◆ 内部構造圖 Internal configuration drawing



- 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

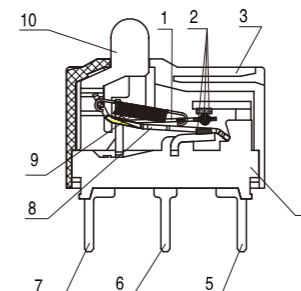
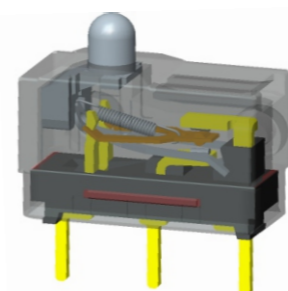


◆ WS5-2055 第二代防水罩灌膠型 Second-generation



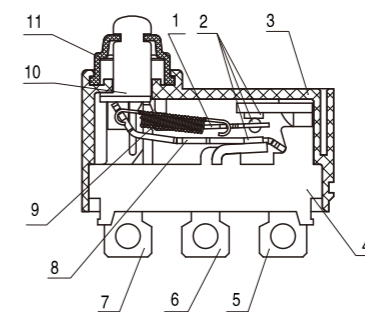
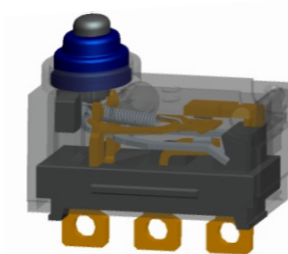
- 1.可動片 Moving piece
- 2.電觸點 Contact
- 3.外殼 Base
- 4.底座 Case
- 5.常閉端子 NC terminal
- 6.常開端子 NO terminal
- 7.導線 Wire
- 8.支架 Support
- 9.杠杆 Lever
- 10.拉簧 Pull spring
- 11.按鈕 Plunger
- 12.密封圈 Hermetic loop

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



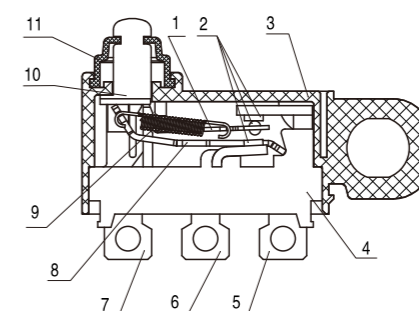
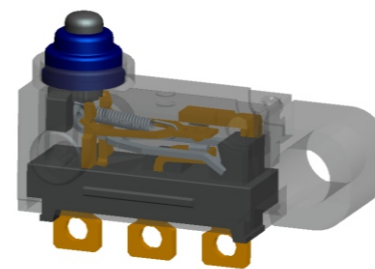
- 1.可動片 Moving piece
- 2.電觸點 Contact
- 3.外殼 Base
- 4.底座 Case
- 5.常閉端子 NC terminal
- 6.常開端子 NO terminal
- 7.支架 Support
- 8.杠杆 Lever
- 9.拉簧 Pull spring
- 10.按鈕 Plunger

◆ WS5-30 第三代基本型 Third-generation

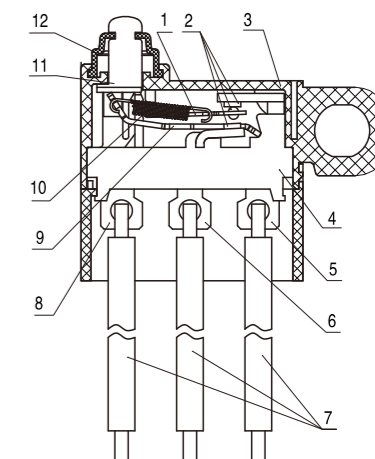
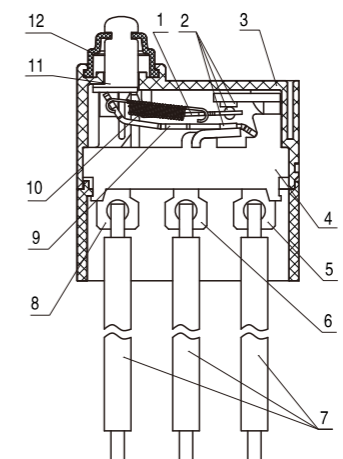
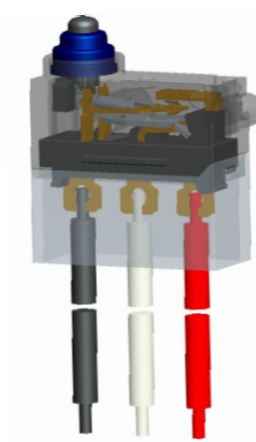


- 1.可動片 Moving piece
- 2.電觸點 Contact
- 3.外殼 Base
- 4.底座 Case
- 5.常閉端子 NC terminal
- 6.常開端子 NO terminal
- 7.支架 Support
- 8.杠杆 Lever
- 9.拉簧 Pull spring
- 10.按鈕 Plunger
- 11.密封圈 Hermetic loop

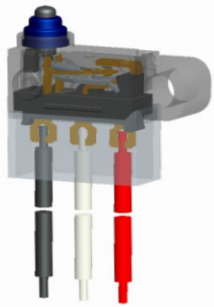
Third-generation



◆ WS5-3055 第三代防水罩灌膠型 Third-generation

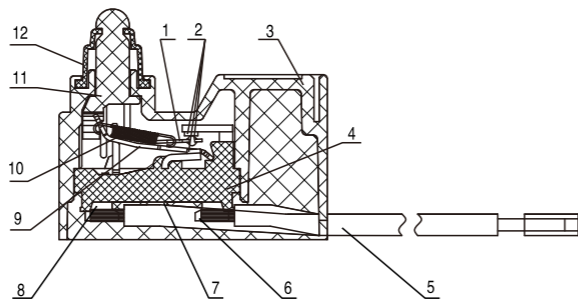
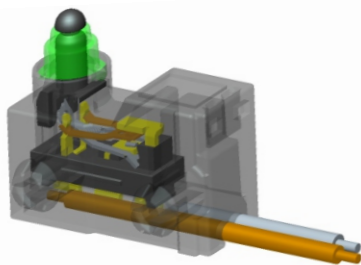


◆ WS5-3055 第三代防水罩灌膠型 Third-generation



- |         |              |         |               |
|---------|--------------|---------|---------------|
| 1. 可動片  | Moving piece | 7. 導線   | 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. 導線   | Wire         | 11. 按鈕  | Plunger       |
| 6. 常開端子 | NO terminal  | 12. 密封圈 | Hermetic loop |

◆ 接線端尺寸 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

◆ 接線端尺寸 Terminal dimensions

B: 底部導線型 B:Bottom wire type	L: 左面導線型 L:Left side wire type	R: 右面導線型 R:Right side wire type

◆ 接觸形式說明圖 Circuit illustration


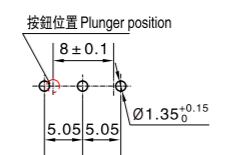
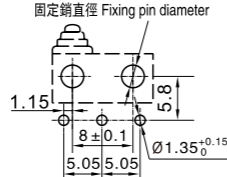
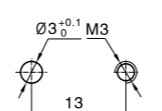

	Z: 轉換式 SPDT	T: 常開式 SPST-NO	D: 常閉式 SPST-NC

◆ 安裝孔尺寸 Mounting hole dimension

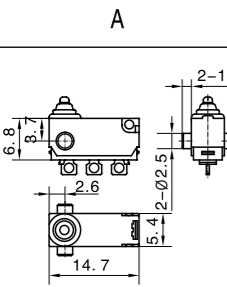
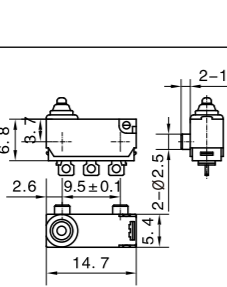
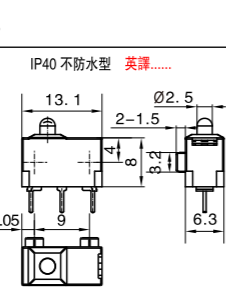
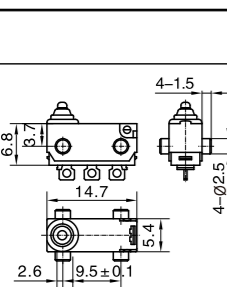
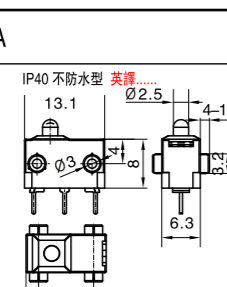
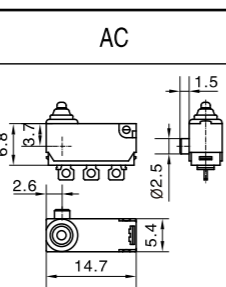
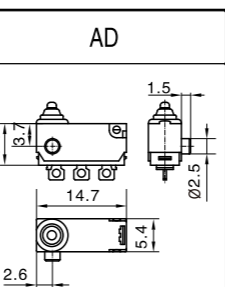
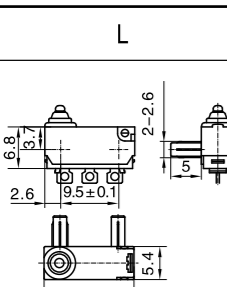
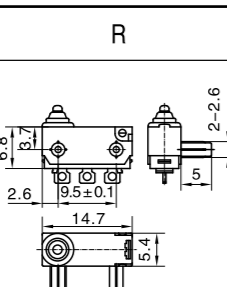
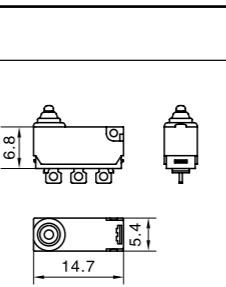
	定位銷/固定銷間距 Dowel pin / fixing pin distance	直PCB端子安裝孔 Straight PCB terminal mounting hole	左右PCB端子安裝孔 Left and right PCB terminal mounting hole	M3螺釘安裝孔 M3 screw mounting hole
WS5				
WS5-20				
WS5-IP40-2041				

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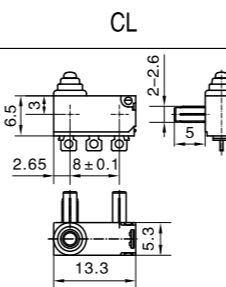
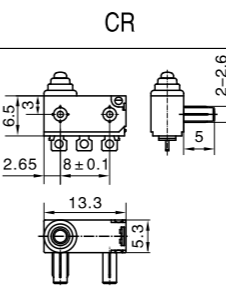
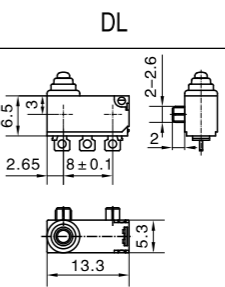
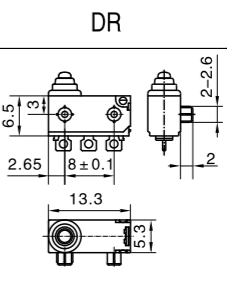
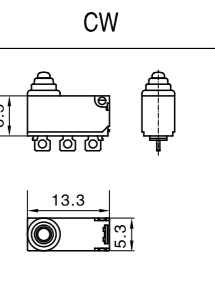
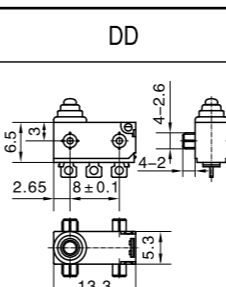
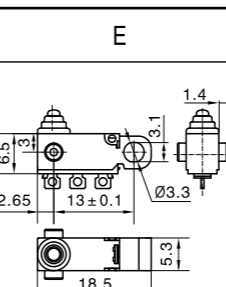
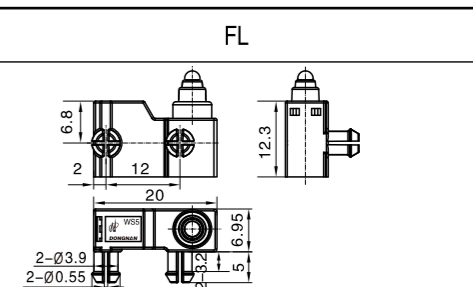
◆ 安裝孔尺寸 Mounting hole dimension

	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	
			
AA	AC	AD	B
			
L	R	W	
			

◆ 安裝構造說明圖 Mounting construction illustration

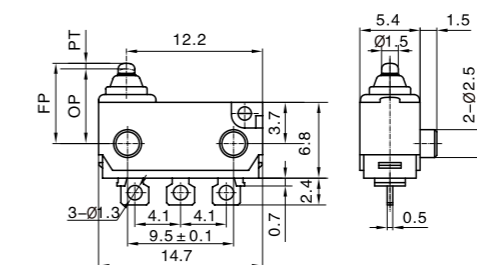
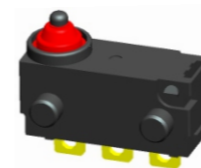
CL	CR	DL	DR	CW
				
DD	E		FL	
				

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

WS5 第一代和WS5-20 第二代外形尺寸和動作特徵 英譯.....

定位銷型 Models with posts

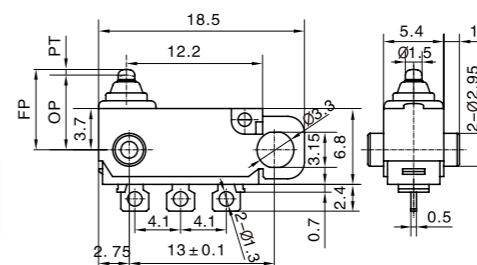
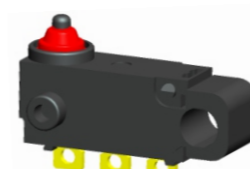
WS5-Z0-□130□-□□



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

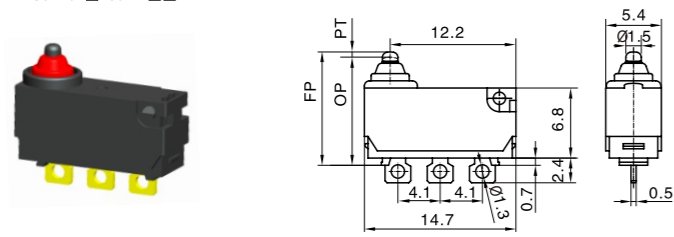
WS5-Z0-□130B-□□



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

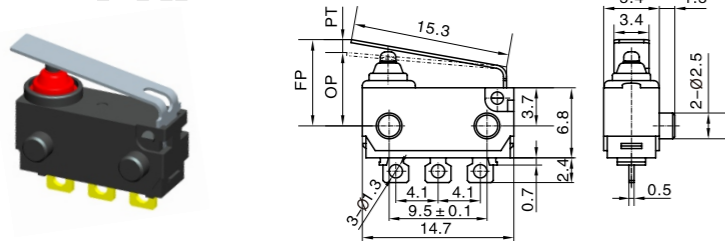
無孔無銷型 Models without posts  
WS5-Z0-□130W-□□



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

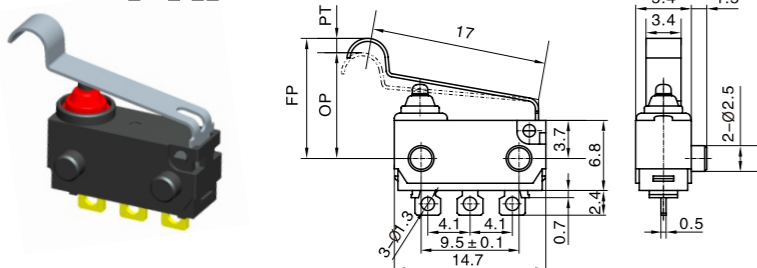
WS5-Z3N-□130□-□□



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

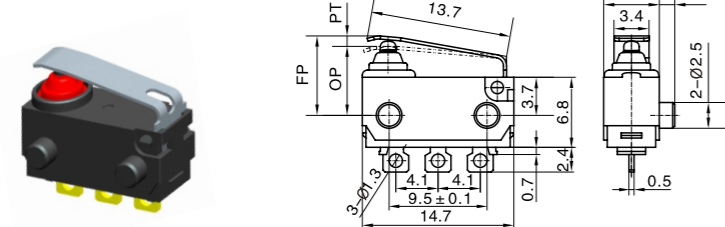
WS5-Z6N-□130□-□□



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□-□□

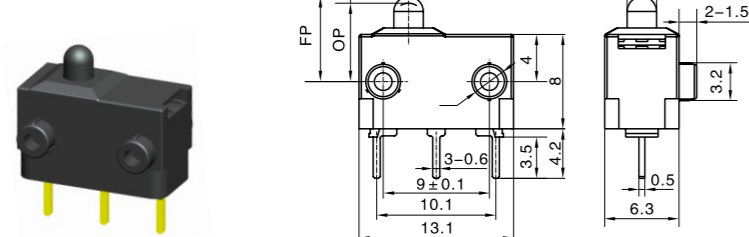


型號 Model	安裝柱型 with posts	M3螺釘固定型 M3 screw fixed	無安裝柱型 without posts
FP Max(mm)	9.4		13.2
OP (mm)	7.1 ± 0.5		10.9 ± 0.5
PT Max(mm)		3.0	
OT Min(mm)		0.8	
MD Max(mm)		0.5	
OF Max(N)		2.20	
RF Min(N)		0.30	

WS5-20 第二代IP40不防水型 外型尺寸和動作特徵 英譯.....

定位銷型 Models with posts

WS5-Z0-□100□-IP40-2041-□

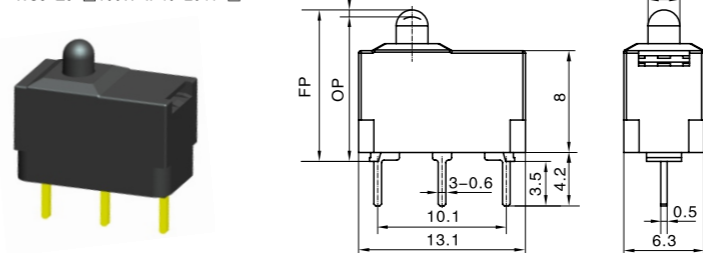


型號 Model	安裝柱型 with posts
FP Max(mm)	7.3
OP (mm)	6.2 ± 0.3
PT Max(mm)	1.5
OT Min(mm)	0.5
MD Max(mm)	0.25
OF Max(N)	1.00
RF Min(N)	0.08

DONGNAN provide you professional micro switch solutions.

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

無孔無銷型 Models without posts  
WS5-Z0-□100W-IP40-2041-□

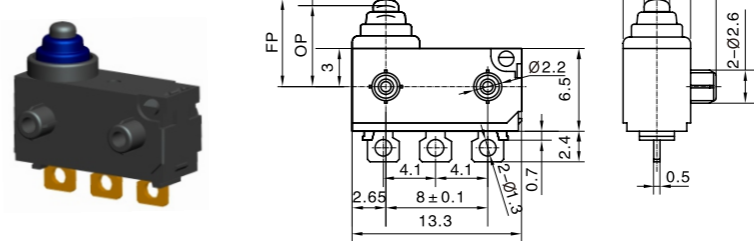


型號 Model	無安裝柱型 without posts
FP Max(mm)	12.0
OP (mm)	10.9 ± 0.3
PT Max(mm)	1.5
OT Min(mm)	0.5
MD Max(mm)	0.25
OF Max(N)	1.00
RF Min(N)	0.08

WS5-30 第三代外型尺寸和動作特徵 英譯.....

固定銷型 Models with posts

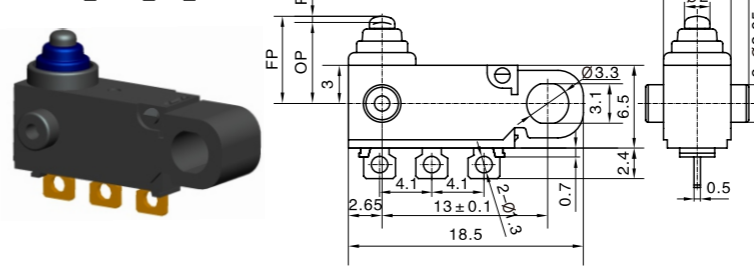
WS5-Z0-□130□-□-30□



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

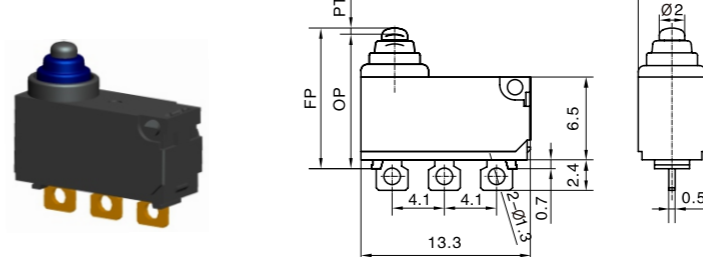
WS5-Z0-□130E-□-30□



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 Models without posts

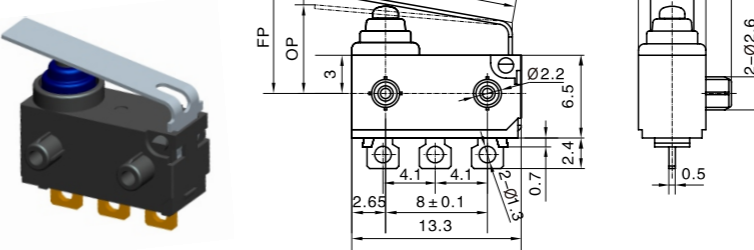
WS5-Z0-□130CW-□-30□



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

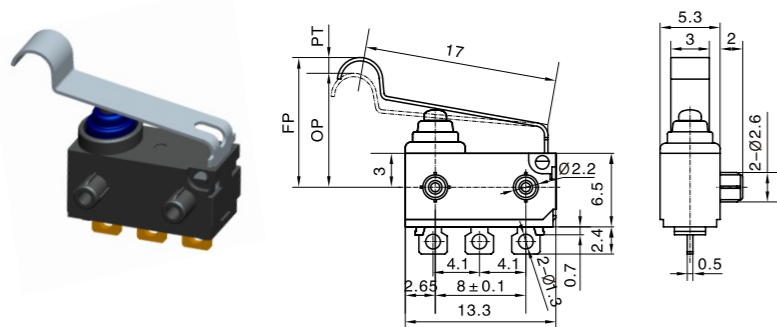
WS5-Z0-□130□-□-30□



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	

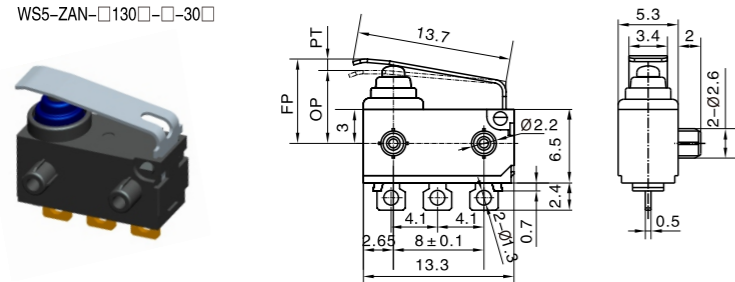
### ◆ 外形尺寸和動作特性 Dimensions and operating characteristics

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



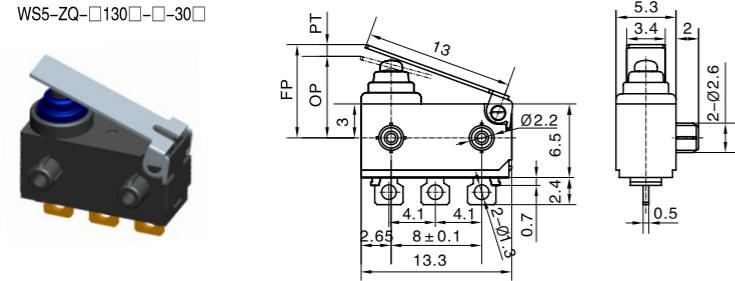
型號 Model	安裝柱型 with posts	M3螺釘固定型 M3 screw fixed	無安裝柱型 without posts
FP Max(mm)	12.8		17.0
OP (mm)	10.6 ± 0.7		14.8 ± 0.7
PT Max(mm)	3.8		
OT Min(mm)	1.5		
MD Max(mm)	0.7		
OF Max(N)	1.8		
RF Min(N)	0.2		

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



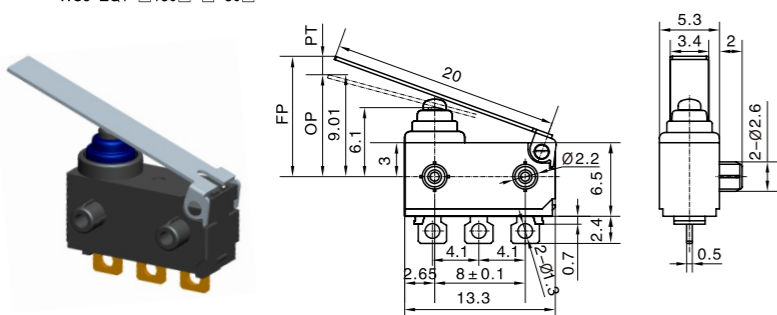
型號 Model	安裝柱型 with posts	M3螺釘固定型 M3 screw fixed	無安裝柱型 without posts
FP Max(mm)	8.6		12.8
OP (mm)	7.0 ± 0.5		11.2 ± 0.5
PT Max(mm)	3.0		
OT Min(mm)	0.8		
MD Max(mm)	0.5		
OF Max(N)	2.20		
RF Min(N)	0.30		

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		

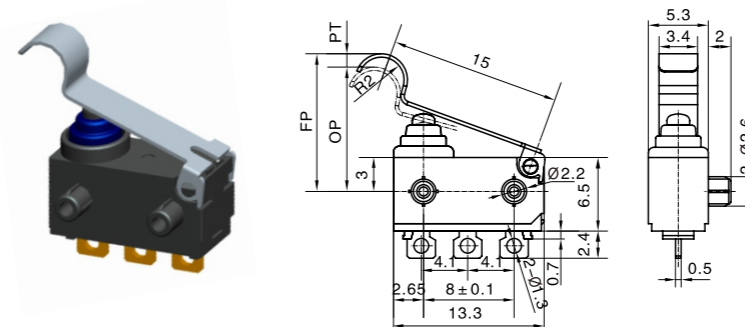
Q1動臂型 Models with Q1 Lever  
WS5-ZQ1-□130□-□-30□



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

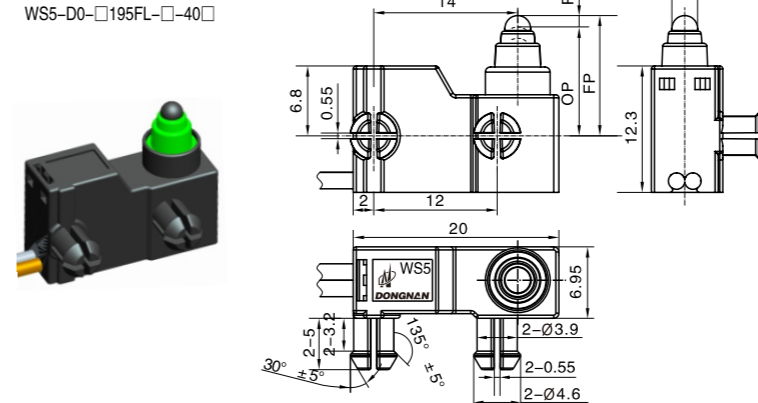
R動臂型 Models with R Lever  
WS5-ZR-□130□-□-30□



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)	3.5		
OT Min(mm)	1.35		
MD Max(mm)	0.6		
OF Max(N)	1.95		
RF Min(N)	0.25		

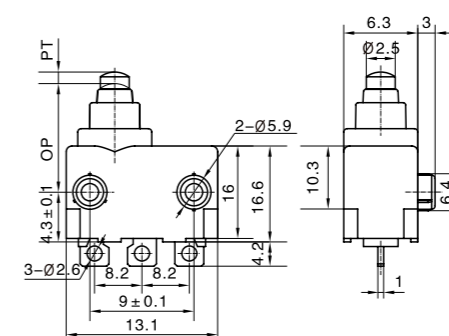
### WS5-40 第四代外型尺寸和動作特徵

固定銷型 Models with posts  
WS5-D0-□195FL-□-40□



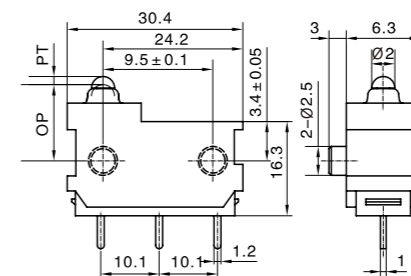
型號 Model	安裝柱型 with posts
FP Max(mm)	12.5
OP (mm)	10.6 ± 0.4
PT Max(mm)	1.5
OT Min(mm)	0.7
MD Max(mm)	0.6
OF Max(N)	1.95
RF Min(N)	0.25

WS5 特殊外型尺寸和動作特徵  
WS5-Z0-F100AR-□



型號 Model	WS5-Z0-F100-X
OF Max(N)	1.00
RF Min(N)	0.20
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
- 接線端子種類齊全，可配備各種導線。  
A variety of contact terminals, provide with variety kinds of wires.
- 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。  
It can be used in automobile, agricultural machinery, large home appliances, office equipment and other places which have environmental protection requirements.



### ◆ 技術特性 Technical Characteristics

項目 Item	特性值 Value	
環境溫度 Environment temperature	-40 ~ +85°C	
工作速度 Operating speed	30mm ~ 600mm/s (無動臂時no lever)	
工作頻率 Operating Frequency	機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; electrical 25cycles/min	
絕緣電阻 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、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.	AC1500V, 50/60Hz, 1min
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm雙振幅 double amplitude	
抗衝擊 Shock resistance	耐久: 1000m/S <sup>2</sup> (約100G) 最大 endurance: 1000m/S <sup>2</sup> (approx 100G) max 誤動作: 300m/S <sup>2</sup> (約30G) 最大 Wrong action: 300m/S <sup>2</sup> (approx.30G) max	
防觸電保護等級 Electric shock proof protection grade	I 級class	
外殼防護等級 Degrees of protection provided by enclosure	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 grades	
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

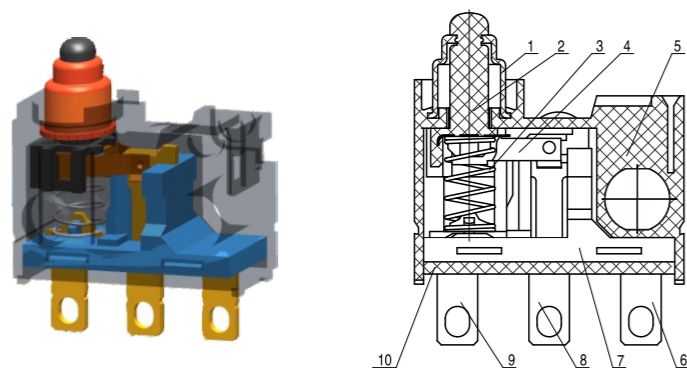
<b>1</b> 溫度等級 Degrees of temperature	無標記No mark: 40T85	<b>6</b> 動作力(max) Operating force	150: 1.5N 注: 若是非標準動作力, 用此動作力上限值表示。 Note: if it is not standard operating force, indicate with the upper limit.
<b>2</b> 額定值 Rating	無標記No mark: 1mA 5VDC; 50 mA 16VDC; 100mA30VDC	<b>7</b> 安裝構造 Mounting construction	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)
<b>3</b> 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)	<b>8</b> 導線型端子的導線長度(毫米數) Wire length of wire type terminal (mm)	非導線型, 該位置空缺。 Vacant for non-wire type
<b>4</b> 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) 若動臂為內安裝式, 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.	<b>9</b> 防護等級 Degrees of protection provided by enclosure	無標記No mark: IP67
<b>5</b> 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)導線型Bottom (downward) wire type L:左面導線型(左右的定義見圖示) Left side wire type (definition of right and left is shown in diagram) R:右面導線型 Right side wire type Y:非標準端子not standard terminal	<b>10</b> 附加規格代號及導線顏色配置代號 Append specs code and wire color code	適用於apply to: 1) 當開關使用了非標準零件如非標準端子時; When used not standard parts such as not standard terminal. 2) 當顧客有特殊動作特性值或其它要求時; When customer has particular operatingvalue or other requirements. 3) 當導線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.

◆ 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

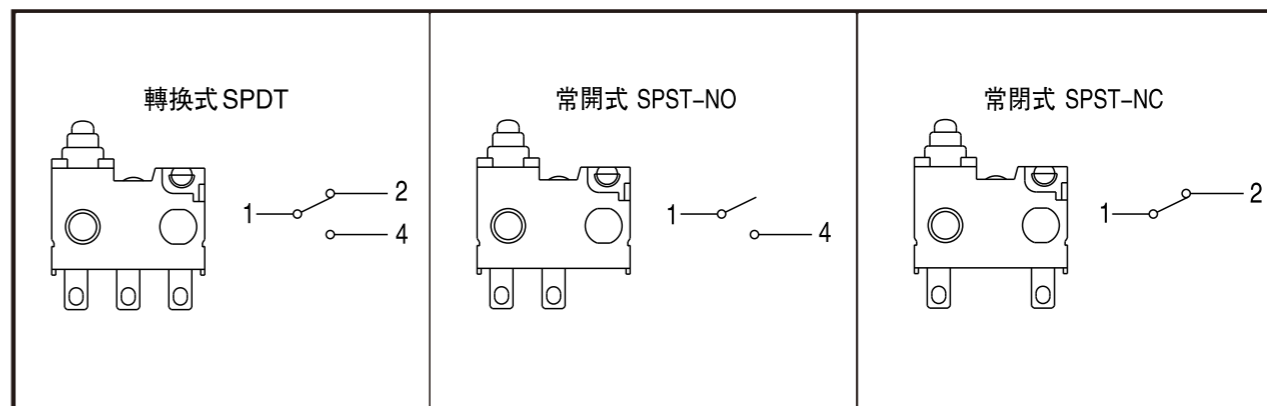
		10	<p>附加規格代號及導線顏色配置代號 Append specs code and wire color code</p> <p>■ 導線顏色配置代號：用三個英文字母按COM、NC、NO順序表示；若是常開式或常閉式開關，空缺位置用字母O表示。（顏色代號：紅-R、白-W、黑-B、綠-G、藍-L、黃-M、灰-H、紫-P）。</p> <p>Wire color code: indicate with 3 letters, the order is COM、NC、NO; If NO or NC, vacant place shows O. (Color code: red-R, white-W, black-B, green-G, blue-L, yellow-Y, grey-H, purple-P)</p> <p>示例example: BWR, BOR, RWO</p> <p>■ 若同時有附加規格代號和導線顏色配置代號，則導線顏色配置代號位于附加規格代號之後。</p> <p>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.</p> <p>示例example: 02BWR</p> <p>■ 導線型開關的引線顏色默認配置規定如下Wire color of wire type switch is as follows:</p> <p>公共端引線COM: 黑色 Common terminal wire COM: Black</p> <p>常閉端引線NC:紅色 Normally closed terminal wire NC:Red</p> <p>常開端引線NO:白色 Normally opened terminal wire NO:white</p>
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◆ 內部構造圖 Internal configuration drawing

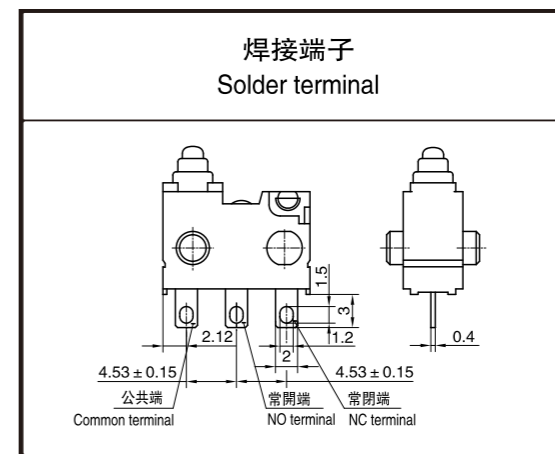


- 1 密封圈 Hermetic loop
- 2 按鈕 Plunger
- 3 彈簧 Spring
- 4 簧片 Spring sheet
- 5 外殼 Base
- 6 常閉端子 Nc terminal
- 7 底座 Case
- 8 常開端子 No terminal
- 9 支架 Support
- 10 環氧樹脂 Epoxlde resin

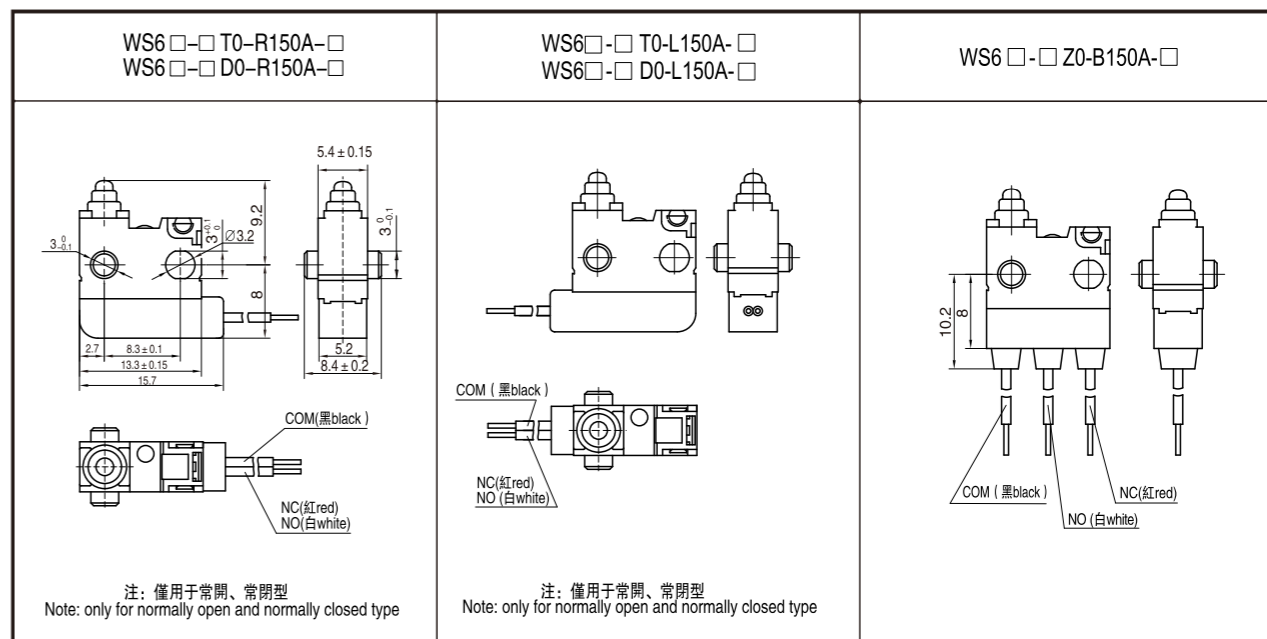
◆ 接觸形式說明圖 Circuit illustration



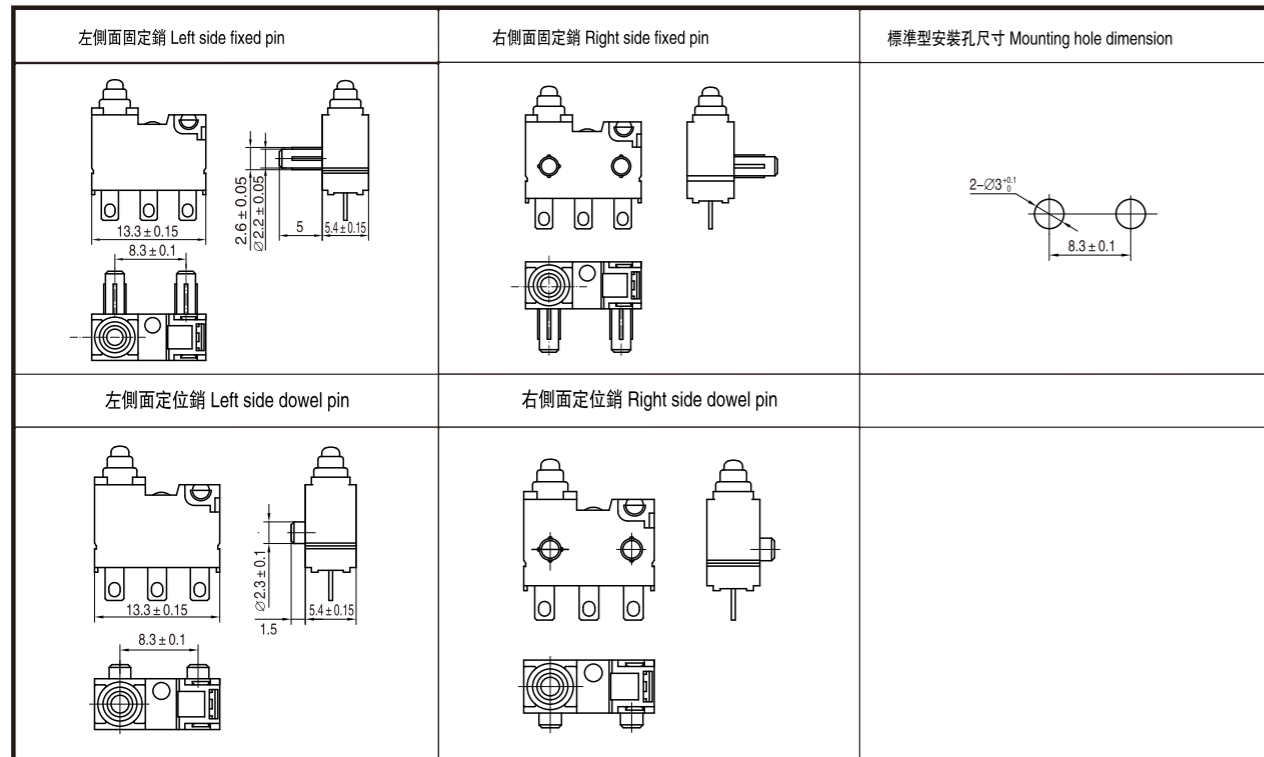
◆ 接線端尺寸 Terminal dimensions



◆ 導線型外形圖 Outline drawing of wire type

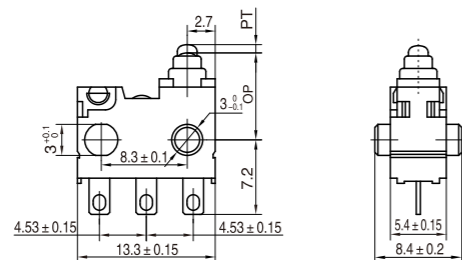


## ◆ 外殼類型及安裝尺寸說明圖 Illustration of cover type and mounting dimension



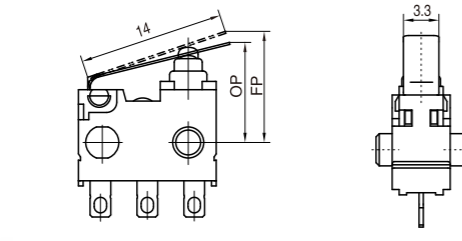
## ◆ 外形尺寸和動作特性 Dimensions and operating characteristics

WS6-□Z0-F150A



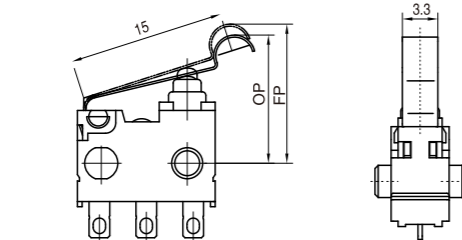
型號 Model	WS6-Z0-F150A	
OF Max(N)	1.5	
PT Max(mm)	1.1	
NC側	OP (mm)	8.7±0.3
	RP (mm)	8.8±0.3
	OT (mm)	2.5
NO側	OP (mm)	8.4±0.3
	RP (mm)	8.5±0.3
	OT (mm)	2.2

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

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DONGNAN provide you professional micro switch solutions.

## 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.
- 可配備各種導線  
Provide with variety kinds 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 <sub>μ</sub> , 10GPA 125/250VAC <sub>μ</sub> , 4A 30VDC 1/2hp 250VAC <sub>μ</sub>	
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	
絕緣電阻 Insulation resistance	≥100MΩ (500VDC)	
接觸電阻 Contact resistance	端子型 Terminal type ≤50mΩ 導線型 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、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.	AC1500V, 50/60Hz, 1min
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm雙振幅 double amplitude	
抗衝擊 Shock resistance	耐久: 1000m/S <sup>2</sup> (約100G) 最大 endurance: 1000m/S <sup>2</sup> (approx 100G) max 誤動作: 300m/S <sup>2</sup> (約30G) 最大 Wrong action: 300m/S <sup>2</sup> (approx.30G) max	
防觸電保護等級 Electric shock proof protection grade	I 級 I class	
外殼防護等級 Degrees of protection provided by enclosure	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	

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

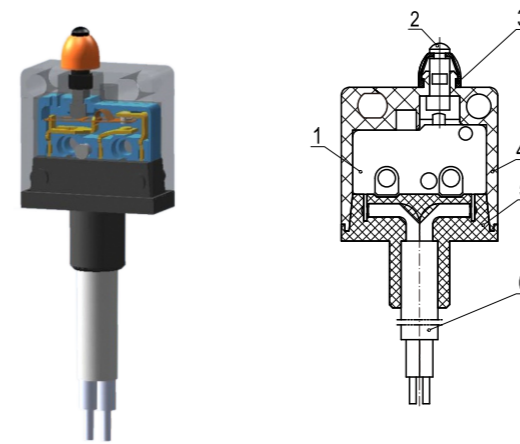
WS7-□□□□-□  
1 2 3 4 5

<b>1</b> 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)	<b>5</b> 附加規格代號及 導線顏色配置代號 Append specs code and wire color code	適用於apply to: 1) 當開關使用了非標準零件如非標準端子時; When used not standard parts such as not standard terminal. 2) 當顧客有特殊動作特性值或其它要求時; When customer has particular operating value or other requirements. 3) 當導線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. ■ 導線顏色配置代號: 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線顏色配置代號, 則導線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 ■ 導線型開關的引線顏色默認配置規定如下: 公共端引線COM: 黑色 常開端引線NC: 藍色 常閉端引線NO: 白色
<b>2</b> 外形特徵 (導線出線方向) Shape characteristics (wire direction)	L: 左方導線Left side wire R: 右方導線Right side wire D: 底面導線Bottom wire type		
<b>3</b> 導線規格 Wire specifications	A:灰色護套綠白電線Gray jacket with green and white wires 2X0.75mm 300V -40~+90°C B:灰色護套綠白電線Gray jacket with green and white wires 2X1.0mm 300V -40~+90°C □:其它規格 Other specifications		
<b>4</b> 導線長度 Wire length	用毫米數表示 Indicate with number- "mm"		

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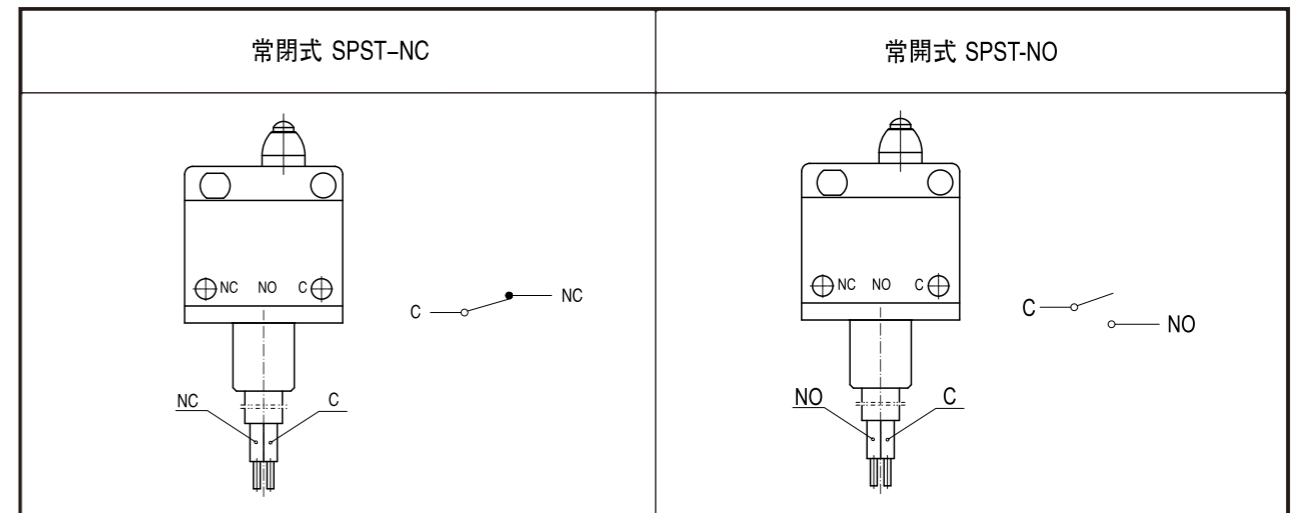
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◆ 內部構造圖 Internal configuration drawing

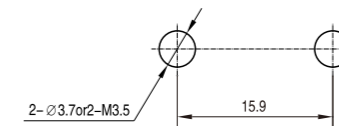


- 1: KW4A微動開關 KW4A Micro switch
- 2: 按鈕 Plunger
- 3: 密封圈 Hermetic loop
- 4: 外殼 Case
- 5: 熱熔膠 Hot melt adhesive
- 6: 護套線 Sheathed wire

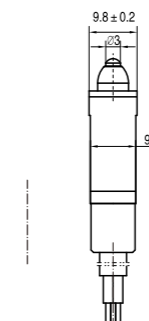
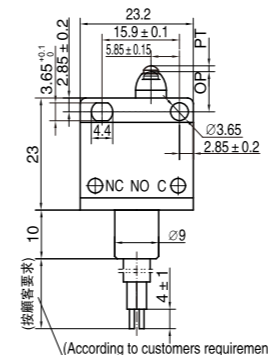
◆ 接觸形式說明圖 Circuit illustration



◆ 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

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## WS8型防水開關系列 Waterproof switch series

### ◆ 特點和用途 Characteristic and usage

- 業界產品體形最小、防塵、防水。採用雙面滑動接觸結構，接觸可靠、抗衝擊能力強。  
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 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 Specifications

項目 Item	特性值 Value	
環境溫度 Environment temperature	-45 ~ +85°C	
相對溫度 Relative temperature	95%, 40°C	
額定值 Rating	0.1A 12V DC ; 50 μA 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	
絕緣電阻 Insulation resistance	≥ 100MΩ (500VDC)	
接觸電阻 Contact resistance	≤ 50MΩ	
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity	AC500V, 50/60Hz, 1min
	帶電金屬零件與地(外殼)之間、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground (case), and between each terminal and non-current-carrying metal parts.	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 <sup>2</sup> (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)	
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	

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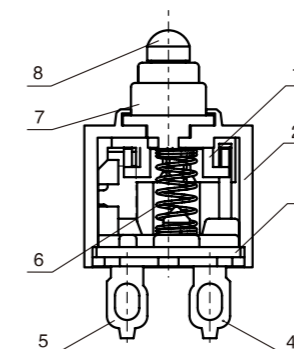
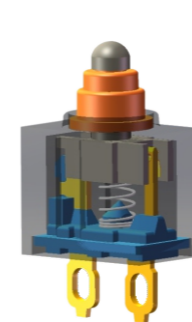
### ◆ 型號規格命名及含義 Model number legend and meanings

WS8 - □ - □ □ □ - □ - ( □ )  
1 2 3 4 5 6

<b>1</b> 接觸形式 Circuit	T:常開(按通)式 SPST-NO D:常閉(按斷)式 SPST-NC (見說明圖 See illustration)	<b>4</b> 安裝構造 Installation structure	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個小腳 No column and no convex platform, 4 small feet at the bottom. (見說明圖 See illuminations)
<b>2</b> 端子類型 Terminal types	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:導線型 Wire type C:壓入式 (見說明圖 See illuminations)	<b>5</b> 導線型端子導線 方向及長度 Direction and length of conductor type terminal	D□:導線在開關下方引出; L□:導線在開關左側引出; R□:導線在開關右側引出。 (□為導線長度毫米數)
<b>3</b> 動作力(MAX) Operating force	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.	<b>6</b> 附加規格代號及 導線顏色配置代號 Append specs code and wire color code	適用於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。 ■ 導線配置為非默認顏色: 用二個英文字母按NC、NO順序表示導線顏色配置 (顏色代號見表1)。
<b>4</b> 安裝構造 Installation structure	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.		導線型開關的引線顏色默認配置規如下: 常閉端引線NC: X色(待定) 常開端引線NO: X色(待定) ■ 若同時有附加規格代號和導線顏色代號, 則導線顏色代號位于附加規格代號之後。

顏色	紅	白	藍	黑	綠	黃	灰	紫
代號	R	W	L	B	G	M	H	P

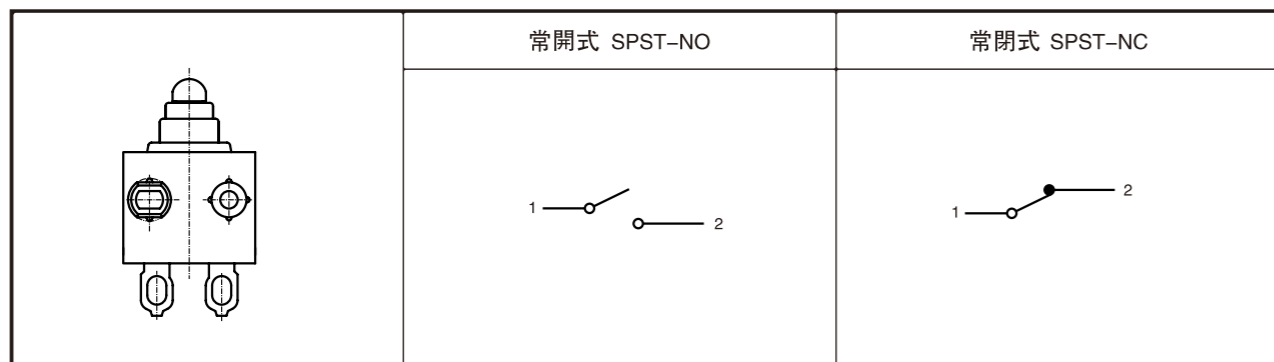
### ◆ 內部構造圖 Internal configuration drawing



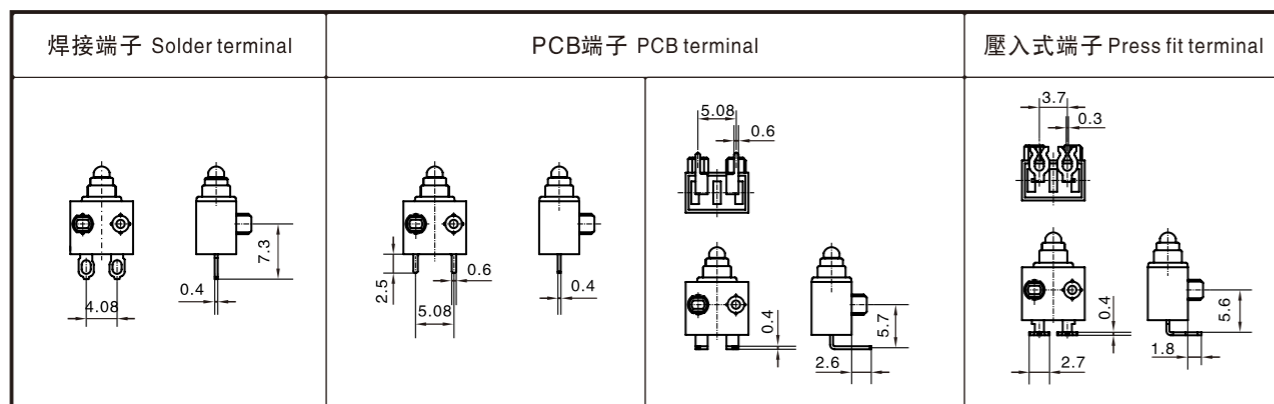
- |            |                         |
|------------|-------------------------|
| 1: 可動片     | Moving piece            |
| 2: 外殼      | Base                    |
| 3: 底座      | Case                    |
| 4: 端子      | Terminal                |
| 5: 常開/常閉端子 | NO terminal/NC terminal |
| 6: 彈簧    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

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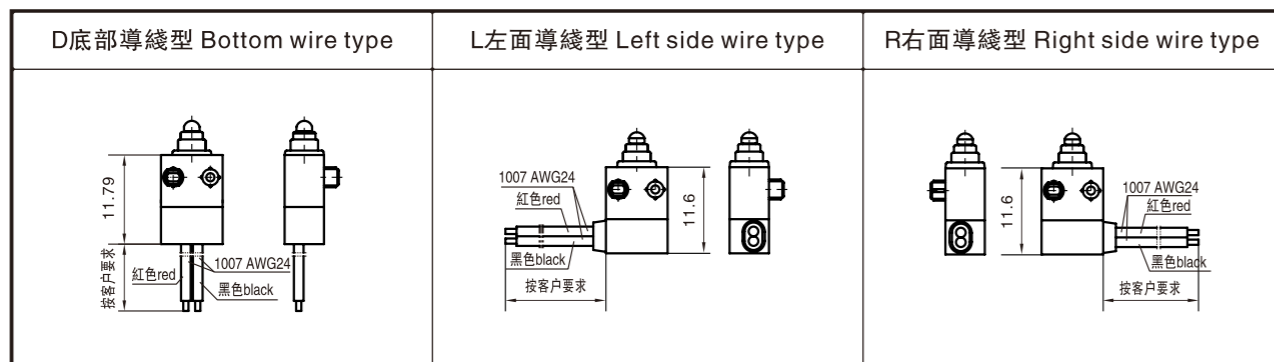
◆ 接觸形式說明圖 Circuit illustration



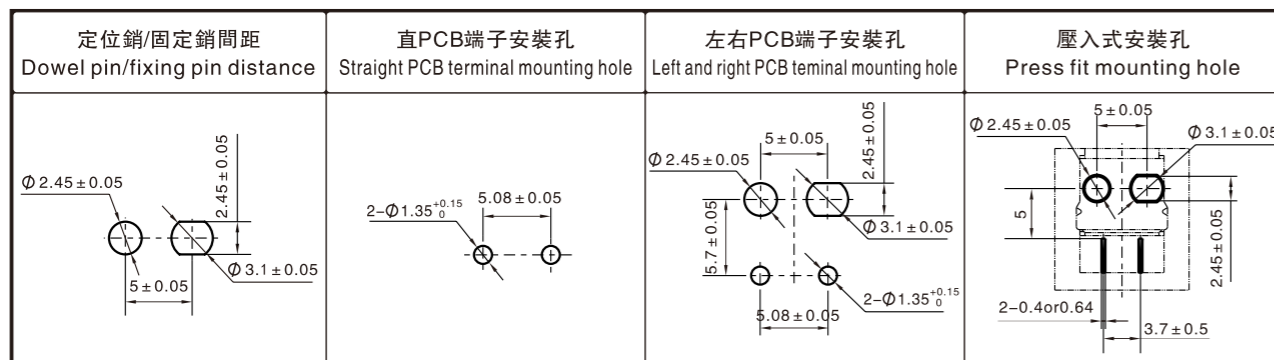
◆ 接線端尺寸 Terminal dimensions



◆ 導線型外形圖 Outline drawing of wire type

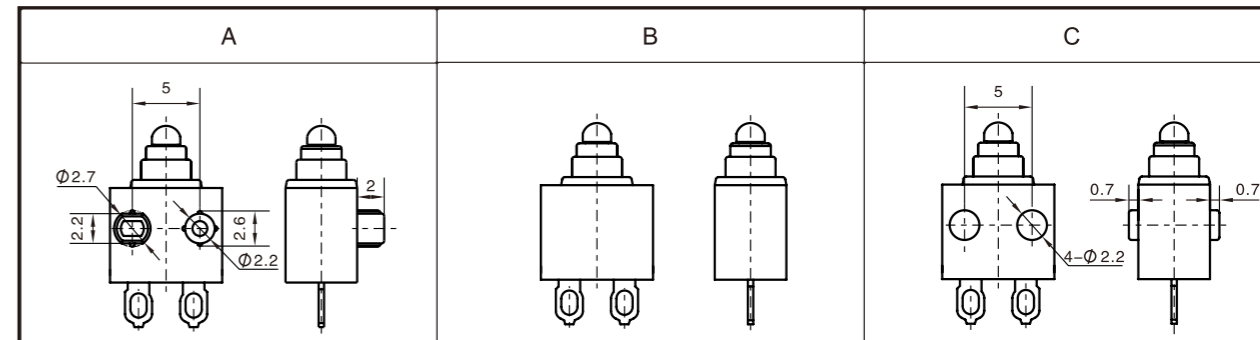


◆ 安裝孔尺寸 Mounting hole dimensions



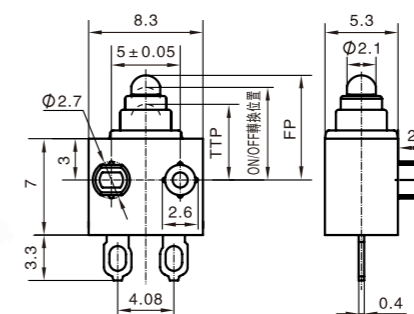
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◆ 安裝構造說明圖 Mounting construction illustration



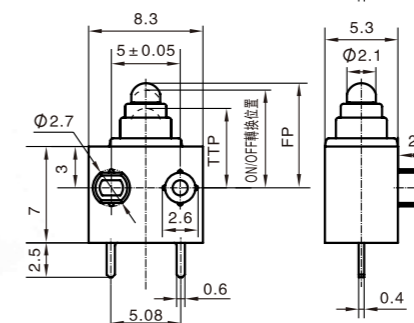
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

WS8-T/D-F150A



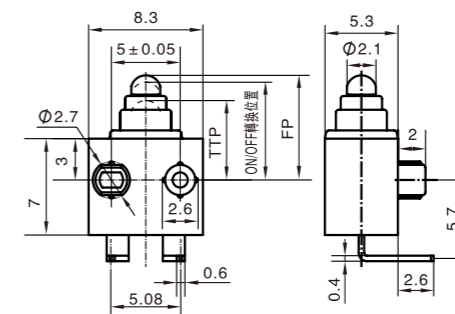
型號 Model	WS8-T/D-F150A
OF Max(N)	1.50
ON/OFF 轉換位置(mm)	7.1 ± 0.2
TTP Min(mm)	5.4
FP Max(mm)	7.9

WS8-T/D-P150A



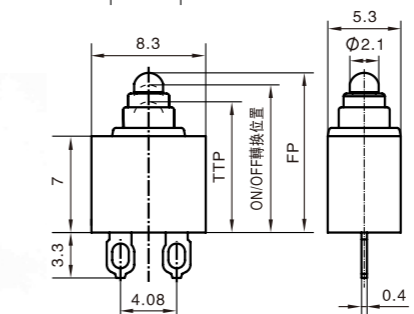
型號 Model	WS8-T/D-P150A
OF Max(N)	1.50
ON/OFF 轉換位置(mm)	7.1 ± 0.2
TTP Min(mm)	5.4
FP Max(mm)	7.9

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

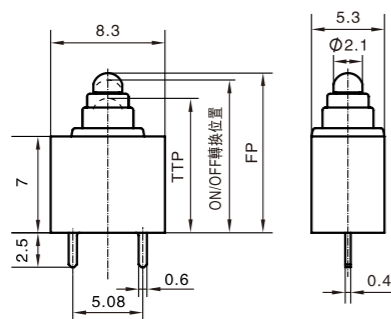
WS8-T/D-F150A



型號 Model	WS8-T/D-F150A
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

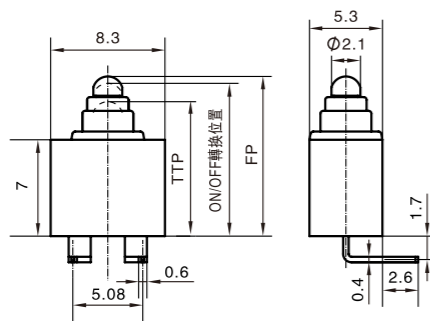
## ◆ 外形尺寸和動作特性 Dimensions and operating characteristics

WS8-T/D-P150B



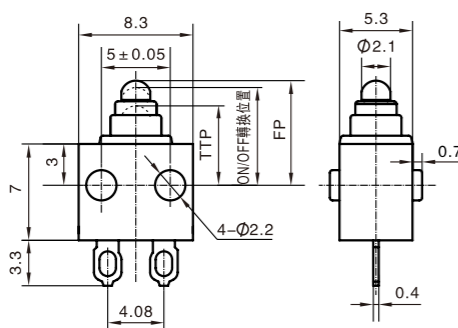
型號 Model	WS8-T/D-P150B
OF Max(N)	1.50
ON/OFF 轉換位置(mm)	11.1 ± 0.2
TTP Min(mm)	9.4
FP Max(mm)	11.9

WS8-T/D-A150B



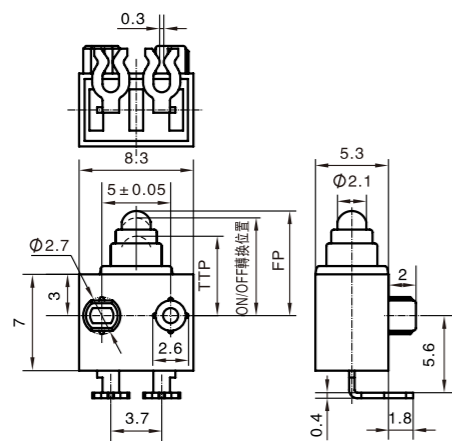
型號 Model	WS8-T/D-A150B
OF Max(N)	1.50
ON/OFF 轉換位置(mm)	11.1 ± 0.2
TTP Min(mm)	9.4
FP Max(mm)	11.9

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

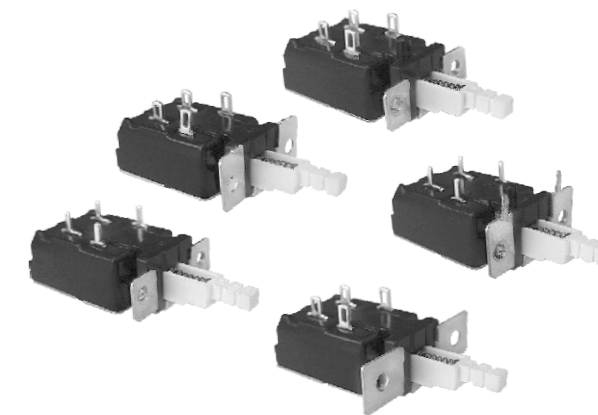
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## KDC-A11 型電源開關系列 Power switch series

## ◆ 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
- 廣泛應用於彩電、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°C	
相對濕度 Relative humidity	95%, 40°C	
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	
絕緣電阻 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、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.	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, CCC	

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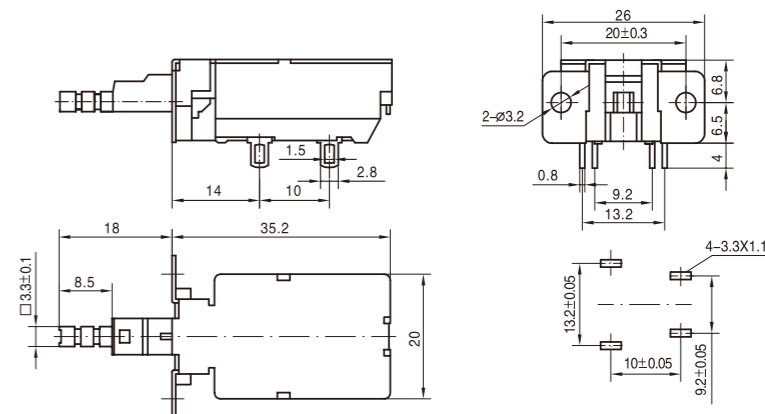
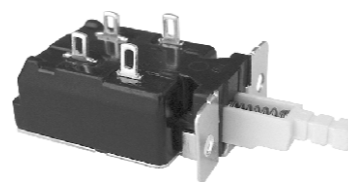
◆ 型號規格命名及含義 Model number legend and meanings

KDC-A11-□ □ □ □  
1 2 3 4

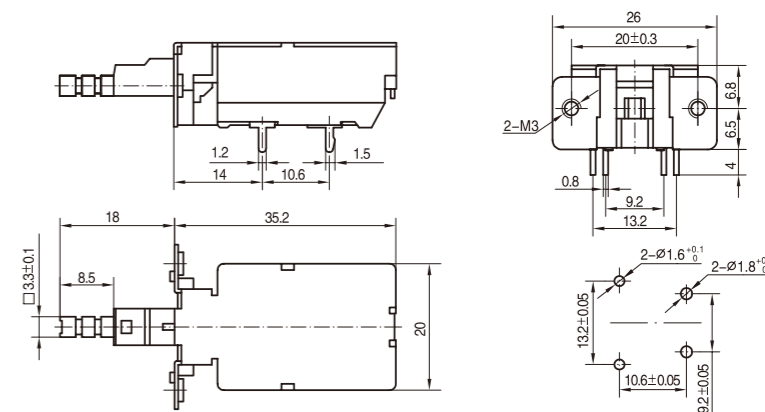
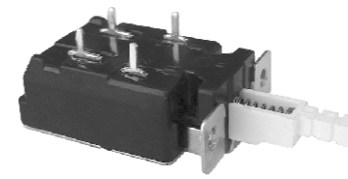
<p><b>1</b> 端子類型 Terminal types</p>	<p>1: 焊接端子 Solder terminal</p> <p>2: PCB端子 PCB terminal</p> <p>3: 快接端子 Quick-connect terminal</p>	<p><b>3</b> 蓋板支腳和 塑殼定位柱 Frame tab and case fixed pole</p>	<p>0: 無支腳, 無定位柱 No frame tab, no case fixed pole</p> <p>1: 有支腳, 有定位柱 Frame tab, case fixed pole</p> <p>2: 無支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

外形和安裝尺寸 Outline and mounting dimensions

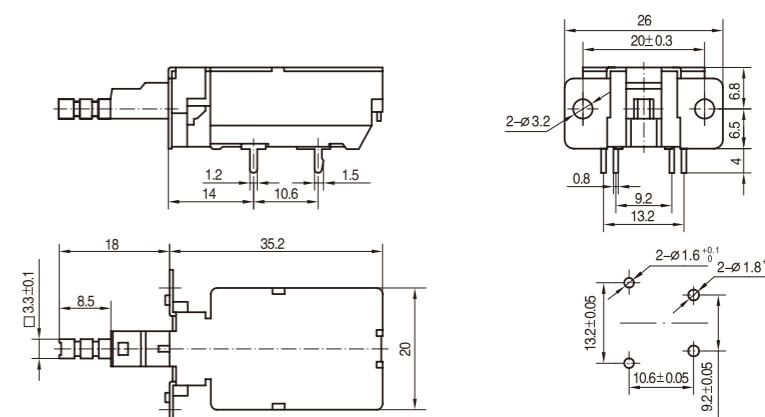
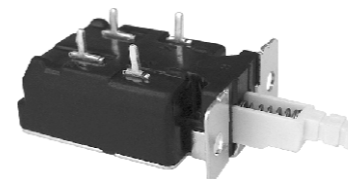
KDC-A11-120



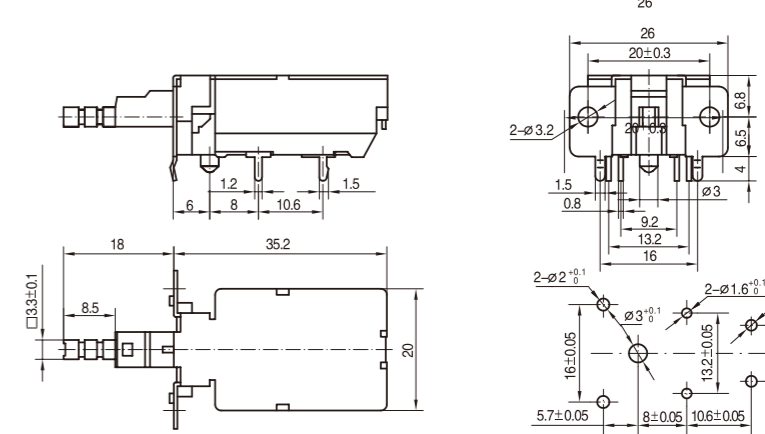
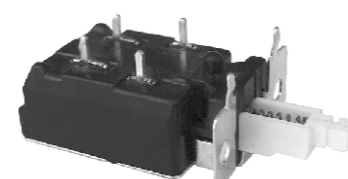
KDC-A11-210



KDC-A11-220

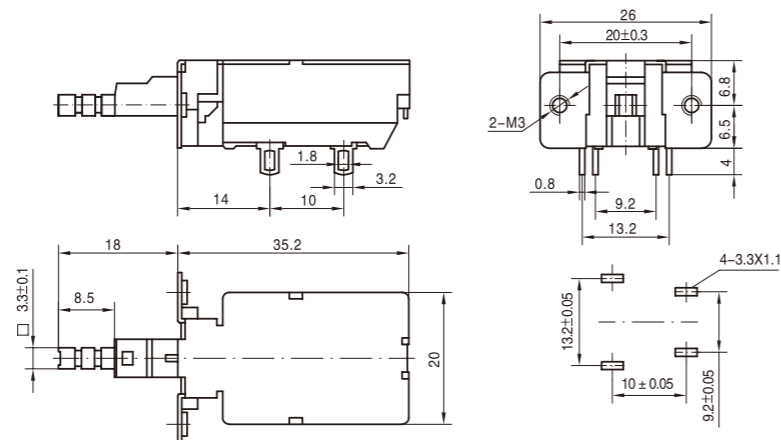
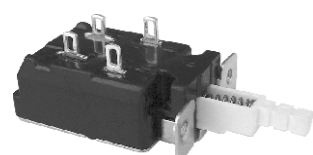


KDC-A11-221



◆ 外形和安裝尺寸 Outline and mounting dimensions

KDC-A11-110



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其他開關系列  
OTHER SWITCH SERIES

其他開關系列  
OTHER SWITCH SERIES



## 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

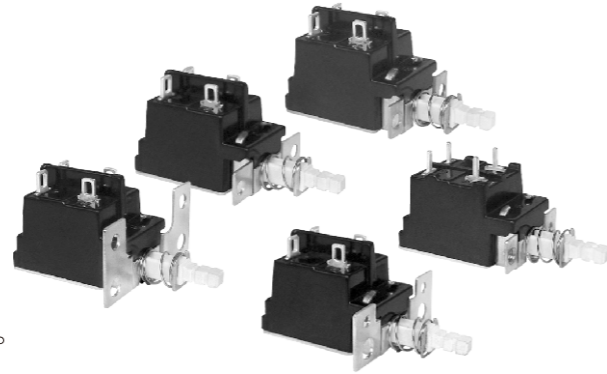
Endure big current and inrush current

#### ■ 可靠性高，壽命長。

Long life, high reliability.

#### ■ 廣泛應用於電視機、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.

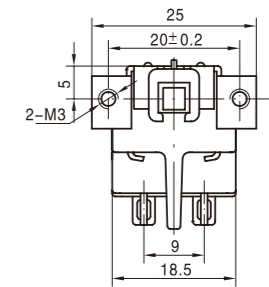
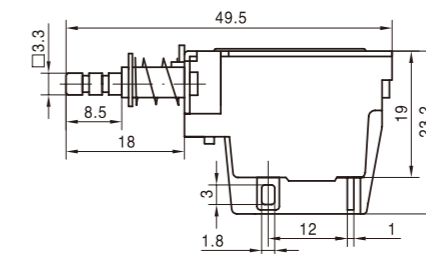
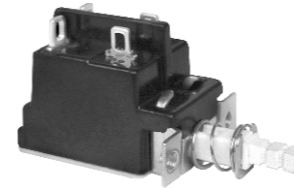


### ◆ 技術特性 Technical Characteristics

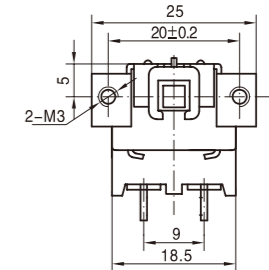
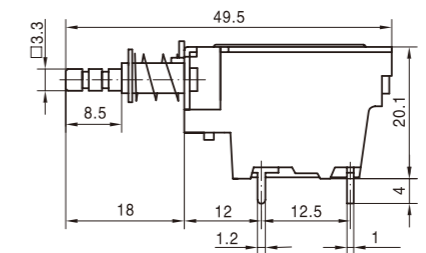
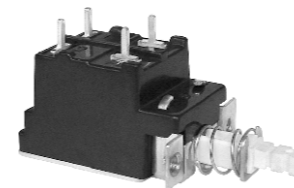
項目 Item	特性值 Value	
環境溫度 Environment temperature	-10 ~ +85°C	
相對濕度 Relative humidity	95%, 40°C	
額定值 Ratings	TV-5 125VAC, 10GPA125/250VAC, 10A125/250VAC 5A/80A250VAC	
工作行程/全行程 Operating travel/full travel	2.5mm/3.5mm	
動作力 Operating force	2 ~ 8N	
電路 Circuit	雙刀單擲 DPST	
絕緣電阻 Insulation resistance	≥ 100MΩ	
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、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.	AC4000V
電氣壽命 Electrical life	10,000次/cycles	
質量 Weight	約 16 g Approx.16g	
安全認證 Safety approvals	UL, CUL, VDE, ENEC, SEMKO, DEMKO, NEMKO, FIMKO, CE, EK, CQC	

### 外形和安裝尺寸 Outline and mounting dimensions

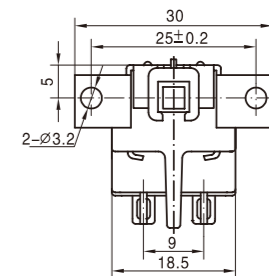
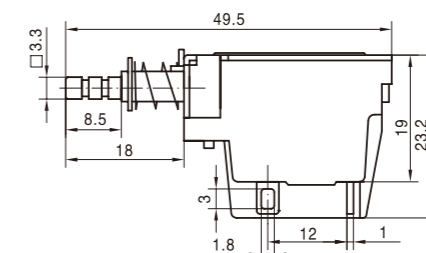
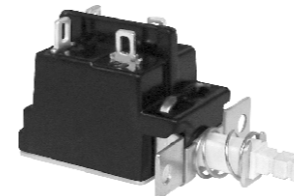
KDC-A04-001



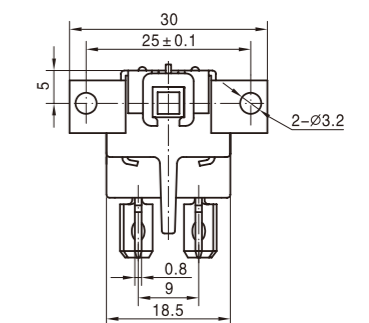
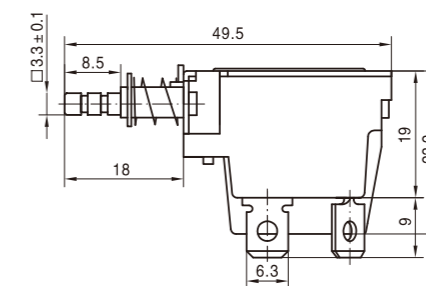
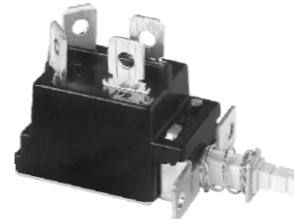
KDC-A04-002



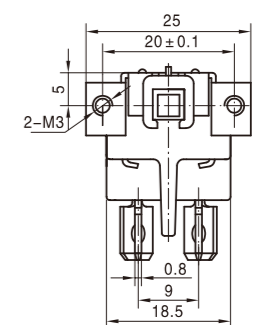
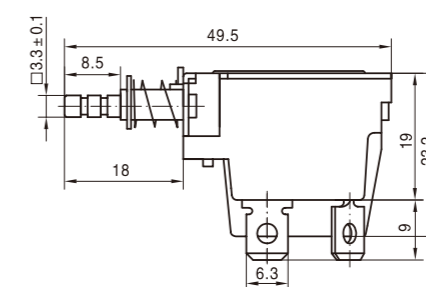
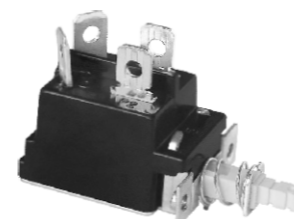
KDC-A04-004



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

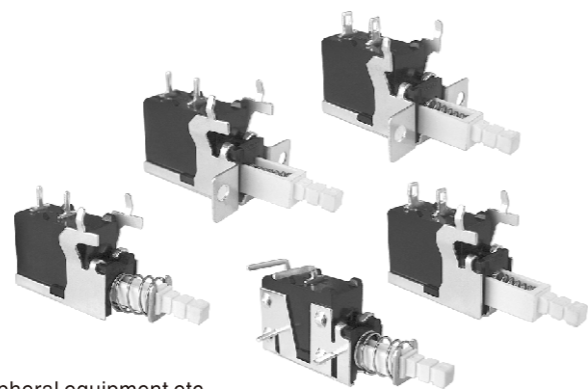
Quick action

#### ■ 可承受大電流和浪涌電流

Endure big current and inrush current

#### ■ 廣泛應用於電視機、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°C; 0 ~ 125°C	
相對濕度 Relative humidity	95%, 40°C	
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	
絕緣電阻 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、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.	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

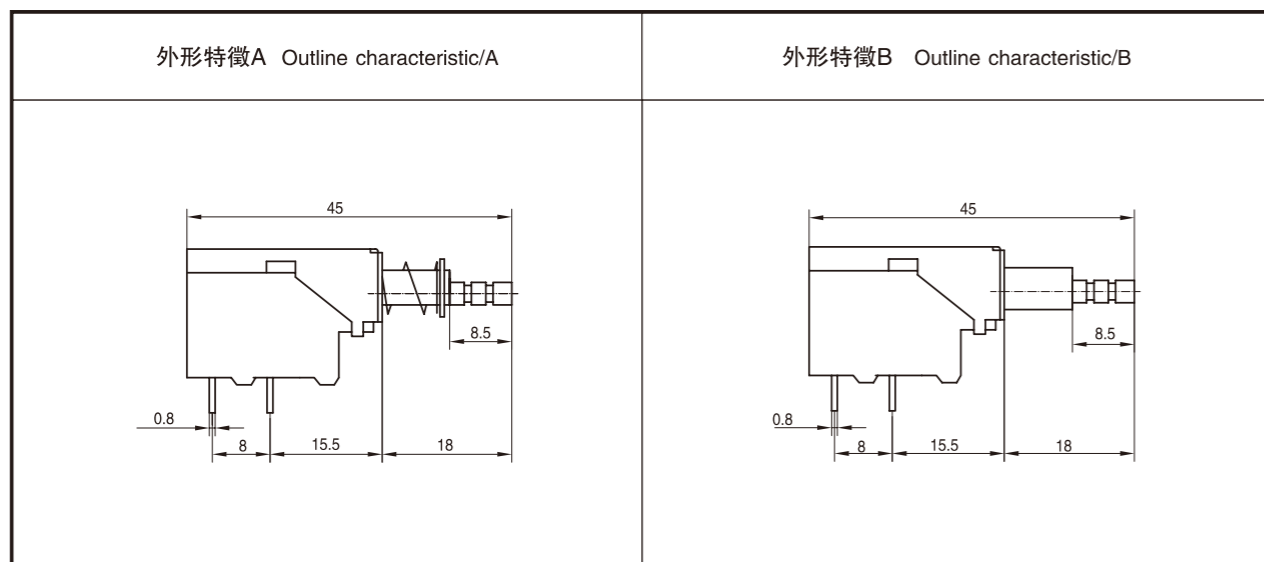
PS4-□□□□□  
1 2 3 4 5

<b>1</b> 外形特徵 Outline features	A: 外彈簧形 Outside spring B: 內彈簧形 Inside spring (見說明圖 see illustration)	<b>4</b> 蓋板形狀特徵 Frame tab shape features	0: 無支腳 No frame tab 1: 支腳尺寸2.6 Frame tab dimension 2.6 2: 支腳尺寸5 Frame tab dimension 5 3: 支腳尺寸6.8 Frame tab dimension 6.8 4: 右側臥 Right lain 5: 左側臥 Left lain
<b>2</b> 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° (見說明圖 see illustration)	<b>5</b> 附加代號 Additional code	用A、B、C……表示與基本型有差異或有特殊要求(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)
<b>3</b> 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 Hole Φ3.2		

### ◆ 接線端尺寸 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



◆ 蓋板特徵圖 Frame tab characteristic drawing

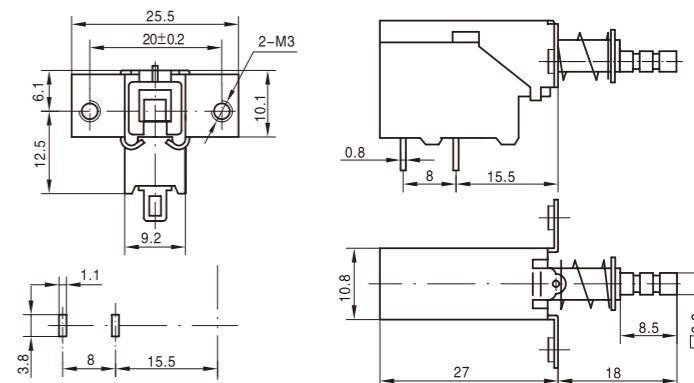
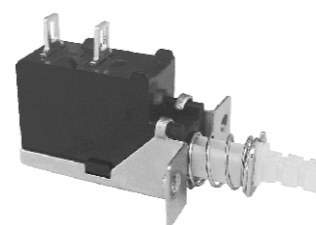
蓋板特徵號 Frame tab characteristic code	0	1	2
蓋板特徵 Frame tab characteristic			
蓋板特徵號 Frame tab characteristic code	3	5	
蓋板特徵 Frame tab characteristic			

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

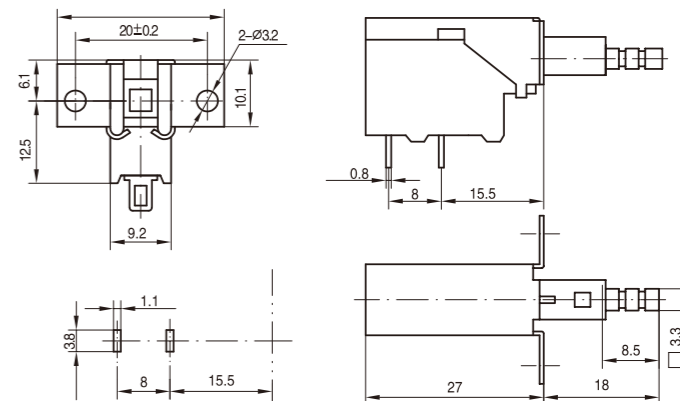
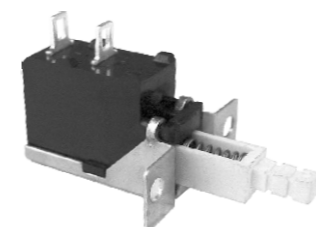
DONGNAN provide you professional micro switch solutions.

◆ 外形和安裝尺寸 Outline and mounting dimensions

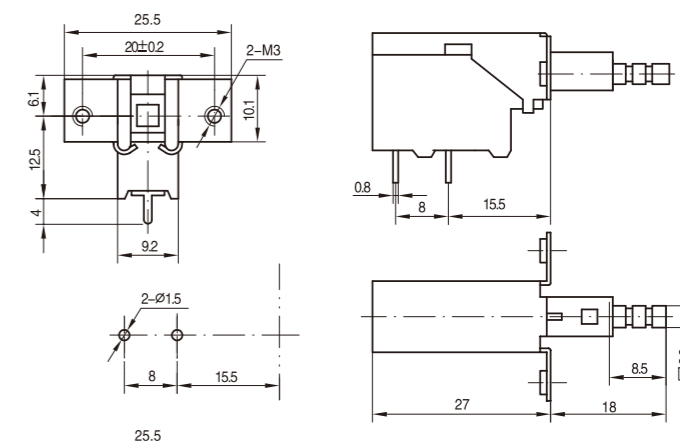
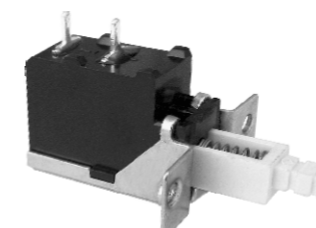
PS4-A510



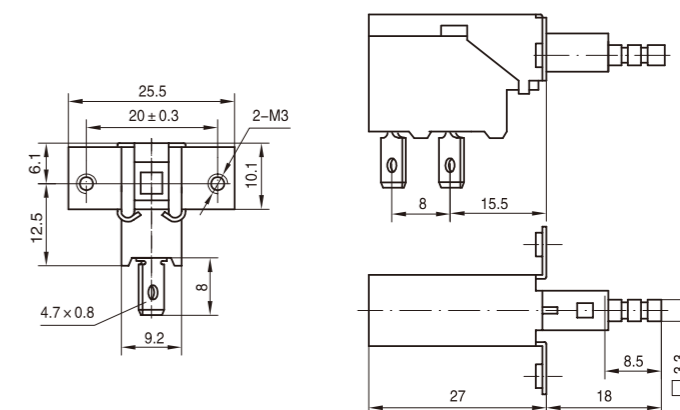
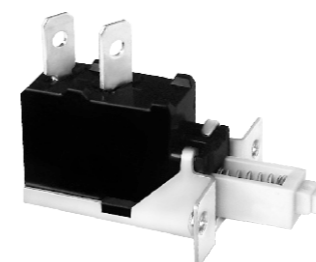
PS4-B520



PS4-B210



PS4-B710



提供安全、可靠的通斷服務，讓電器更完美

## 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	0 ~ 105°C or 0 ~ 125°C	
相對濕度 Relative temperature	95%, 40°C	
額定值 Rating	16A125/250VAC, 16GPA125/250VAC, 16(8)A125/250VAC 10GPA125/250VAC, 10A125/250VAC, 10(6)A125/250VAC	
工作行程/全行程 Operating travel/full travel	4.5mm/7.5mm	
動作力 Operating force	12 ± 2N	
絕緣電阻 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(外殼)之間、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.	AC4000V
電氣壽命 Electrical life	10,000次/cycles	
安全認證 Safety approvals	UL、CUL、TUV、ENEC、DEMKO、CE、CQC	

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

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

PS5 □ - □ □ □ □ - □  
1 2 3 4 5 6

<b>1</b> 溫度等級 Degrees of temperature	無標記 No mark: T125(TUV) T105(UL)	<b>4</b> 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
<b>2</b> 額定值 Ratings	16A125/250VAC, 16GPA125/250VAC 16(8)A125/250VAC 10GPA125/250VAC, 10A125/250VAC 10(6)A125/250VAC	<b>5</b> 推杆代號 Rod code	A B C 外形特徵見附圖 Appearance characteristic see attached drawing
<b>3</b> 電路轉換型式 Circuit conversion type	A: 單極 single pole 3-5 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 pole 1-3, 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	<b>6</b> 附加代號 Additional code	用于表明特殊要求 Used to indicate special requirement

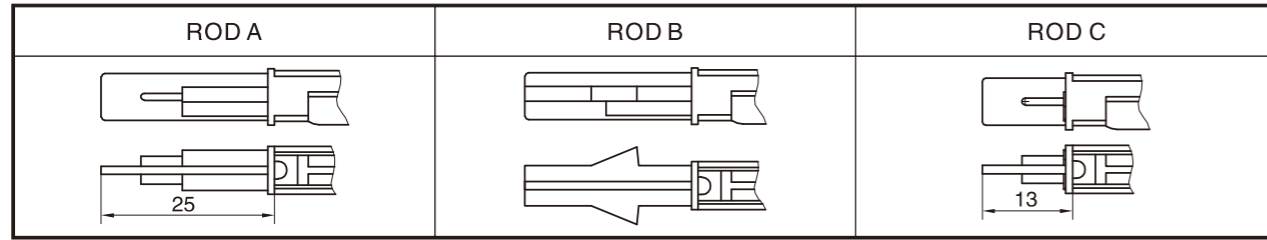
### ◆ 轉換型式說明圖 Conversion forms illustration

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	

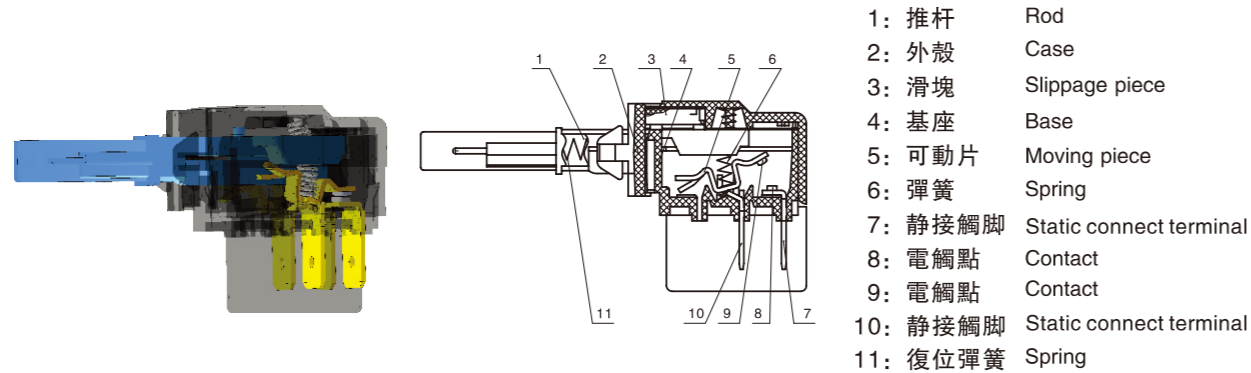
提供安全、可靠的通斷服務，讓電器更完美

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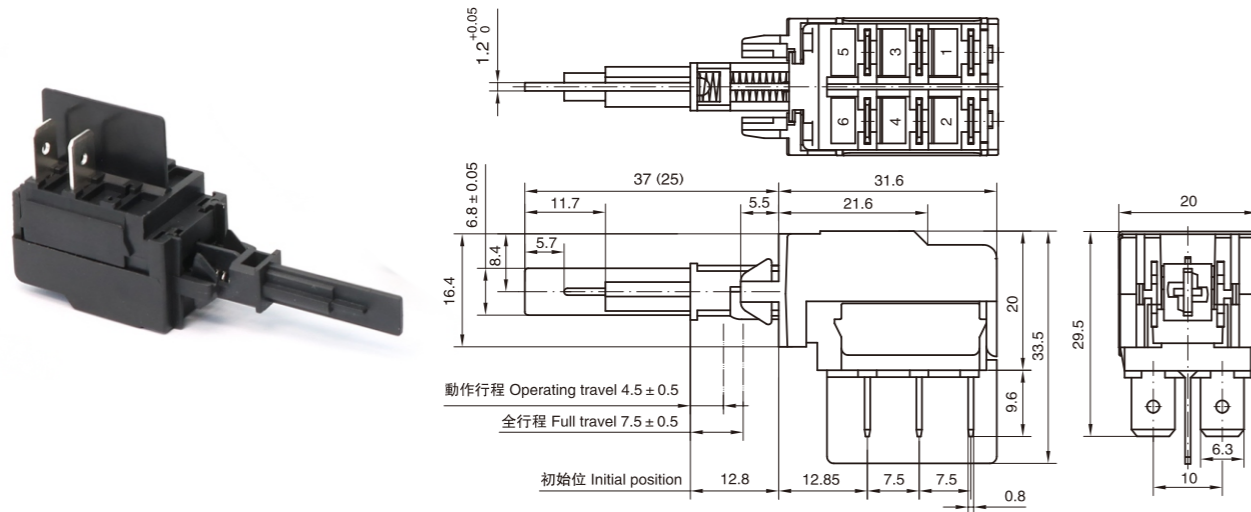
◆ 推杆特徵圖 Rod characteristics drawing



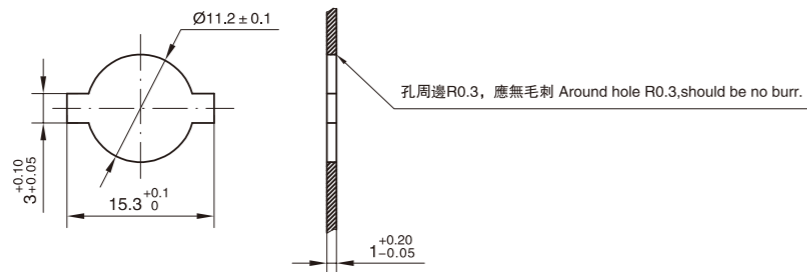
◆ 內部構造圖 Internal configuration drawing



◆ 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
- 應用於家用電器、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

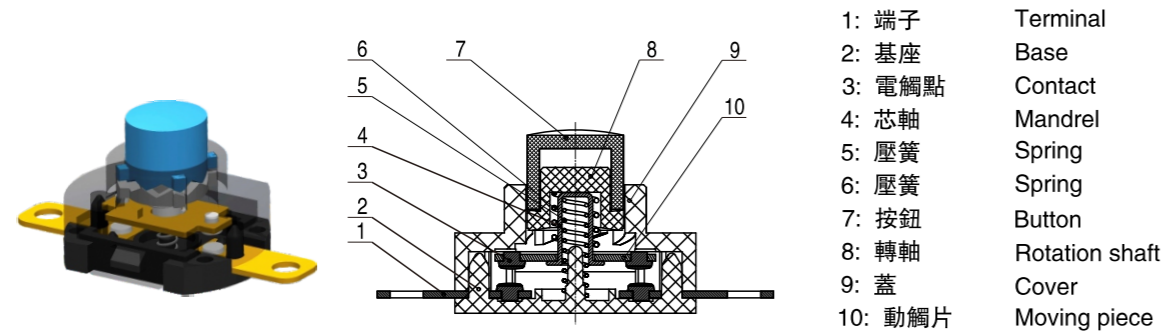
PS6 -□□-□□-□  
 1 2 3 4 5

<b>1</b> 額定值 Ratings	B: 10(3)A250VAC A: 3(1)A250VAC F: 16(4)A125VAC G: 6(2)A125VAC	<b>4</b> 按鈕外形 Button outside	G: 高 Tall A: 短 Short B: 扁 Cut
<b>2</b> 功能 Function	無標記: 鎖定 Latched M: 無鎖 Momentary	<b>5</b> 附加代號 Additional code	用于表明特殊要求 Used to indicate special requirement
<b>3</b> 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		

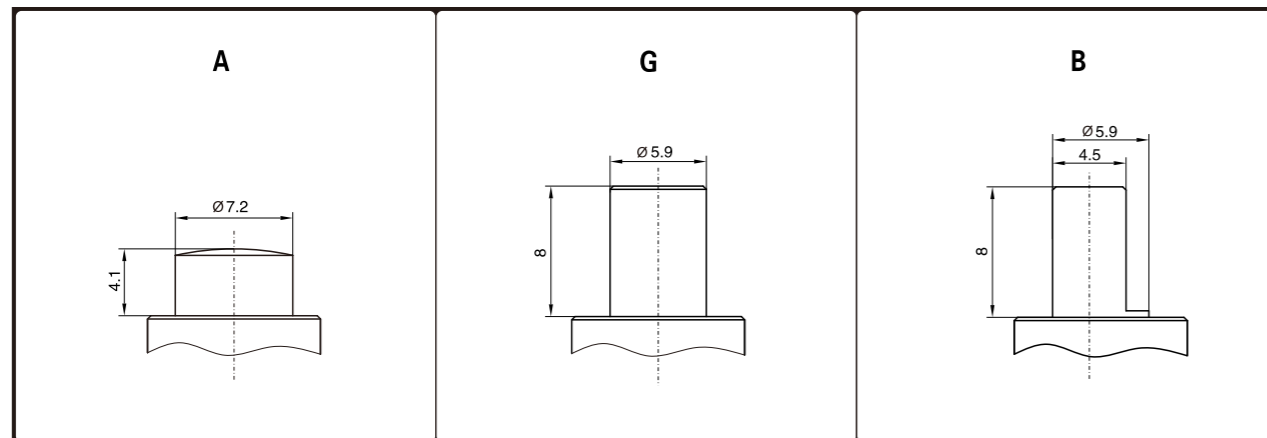
◆ 技術特性 Technical Characteristics

項目 Item	特性值 Value	
溫度等級 Degree of temperature	T85; T105	
動作行程 Operating travel	1.8mm ± 0.2 mm	
全行程 Total travel	3.2mm ± 0.2 mm	
鎖定行程 Lock travel	3mm ± 0.2 mm	
動作力 Operating force	5.8N -8.6N	
絕緣電阻 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、 接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.	AC1500V
電氣壽命 Electric life	1E4 次/cycles	
安全認證 Safety approvals	TUV、CE、CQC	

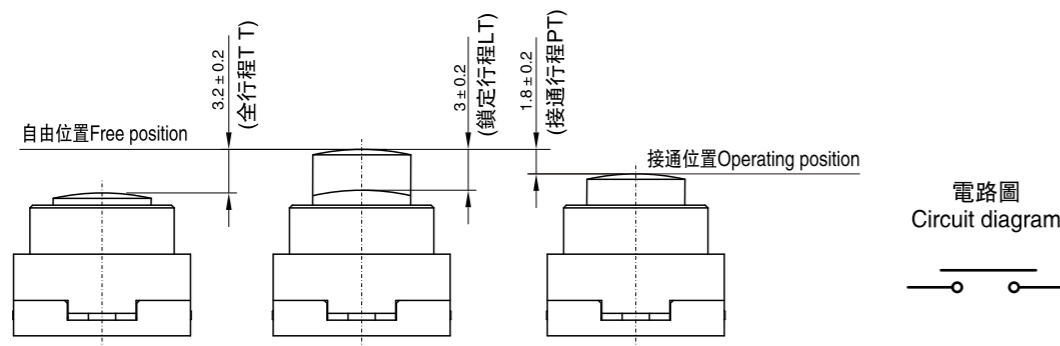
◆ 内部構造圖 Internal configuration drawing



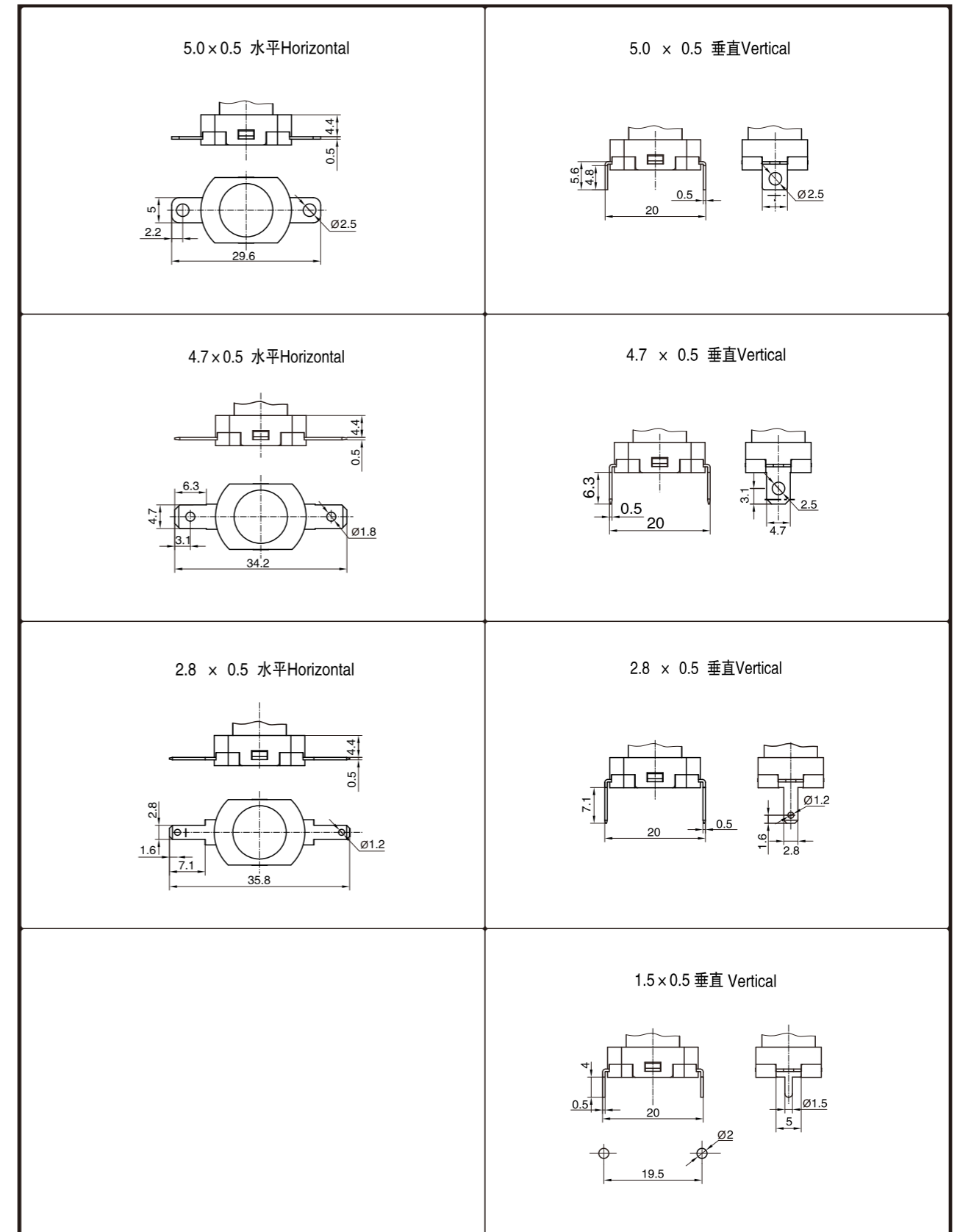
◆ 按鈕外形圖 Button shape drawing



◆ 動作特性圖 Operating characteristics drawing

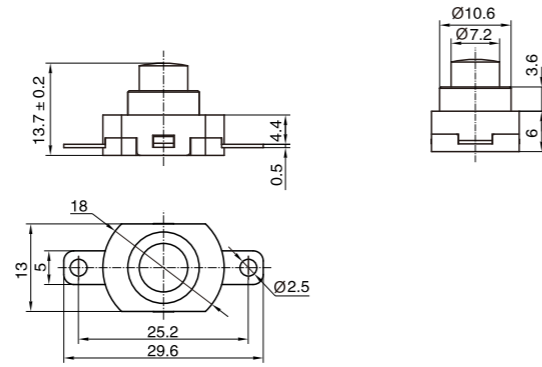


◆ 接線端配置及尺寸 Connect terminals collocation and dimensions

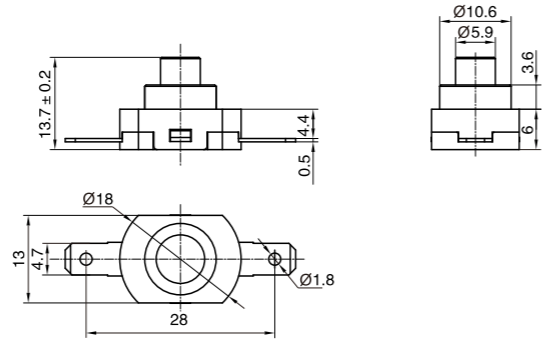


◆ 外形和安裝尺寸 Outline and mounting dimensions

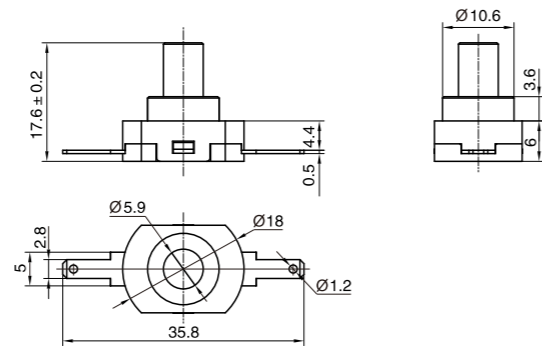
PS6-□□-1A



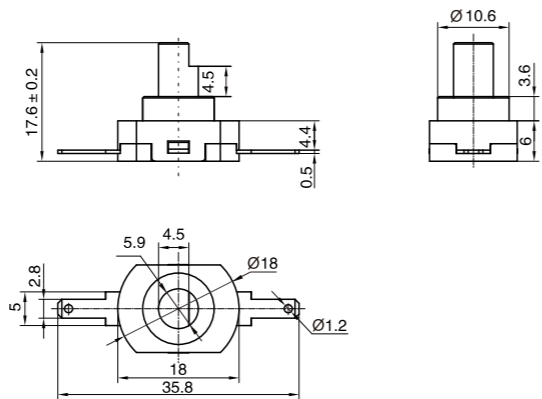
PS6-□□-9A



PS6-□□-7G

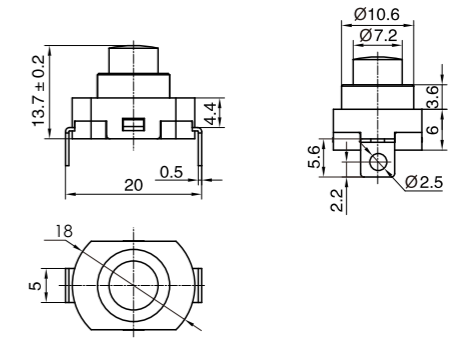


PS6-□□-7B

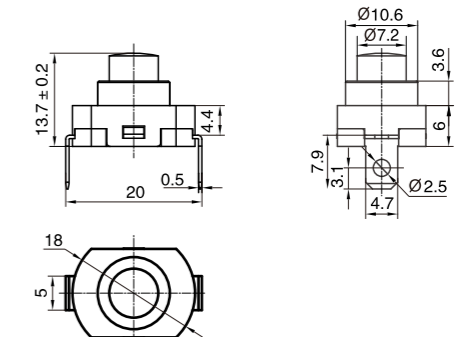


◆ 外形尺寸圖 Shape dimensional drawing

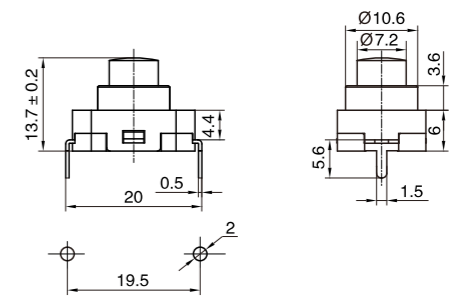
PS6-□□-2A



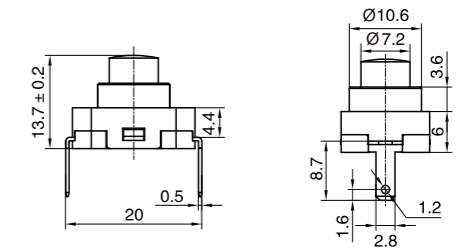
PS6-□□-8A



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
絕緣電阻 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 ≥50000 次 Electrical ≥ 50000cycles
安全認證 Safety approvals	TUV、CE、UL

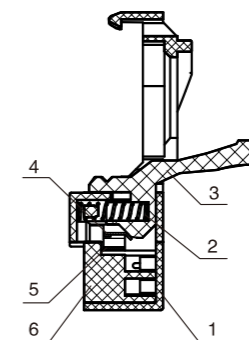
### ◆ 型號規格命名及含義 Model number legend and meanings

PS8□ - (□)  
1 2

1 外形特徵 Outline features	A B C D  (見說明圖See illuminations)	2 附加規格編號 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.

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



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

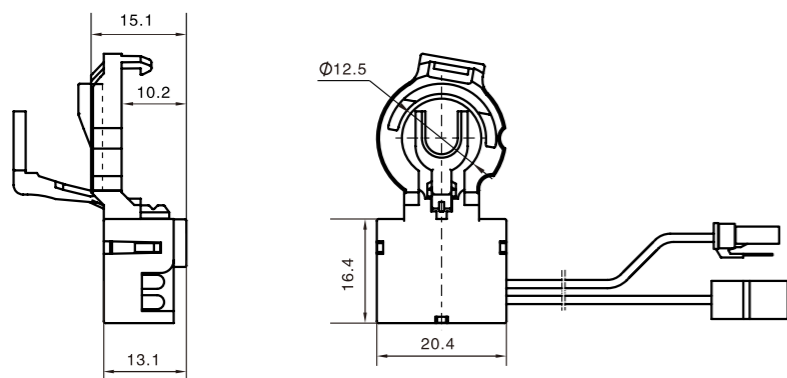
### ◆ 外形特徵說明圖 Outline characteristic illustration

A U型推杆短卡扣 U plunger short buckle	
B 直型推杆短卡扣 Straight plunger short buckle	
C U型推杆長卡扣 U plunger long buckle	
D 直推杆長卡扣 Straight plunger long buckle	



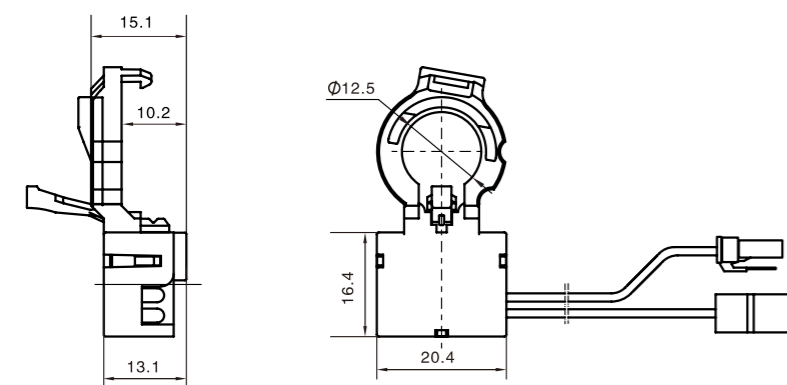
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

PS8-A-□



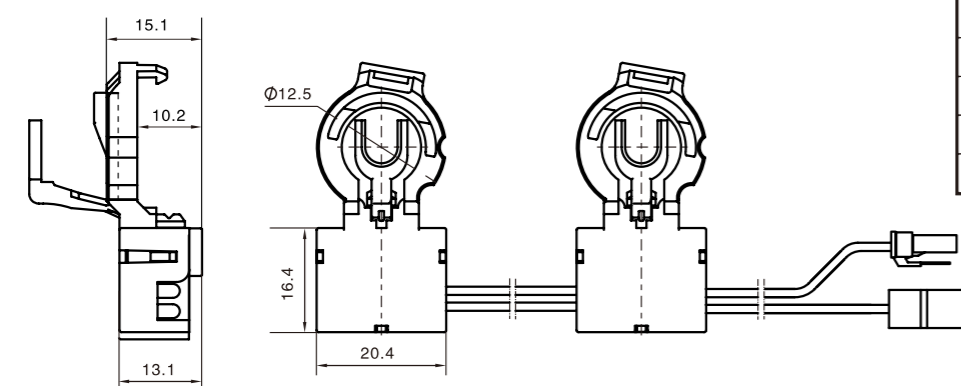
型號 Model	PS8-A-□
OF Max(N)	8.5
OP(mm)	15.7 ± 0.5
FP Max(mm)	17 ± 0.2
TTP (mm)	14 ± 0.3

PS8-B-□



型號 Model	PS8-B-□
OF Max(N)	8.5
OP(mm)	14 ± 0.5
FP Max(mm)	15.3 ± 0.2
TTP (mm)	11.5 ± 0.3

PS8/2-BG-□-□

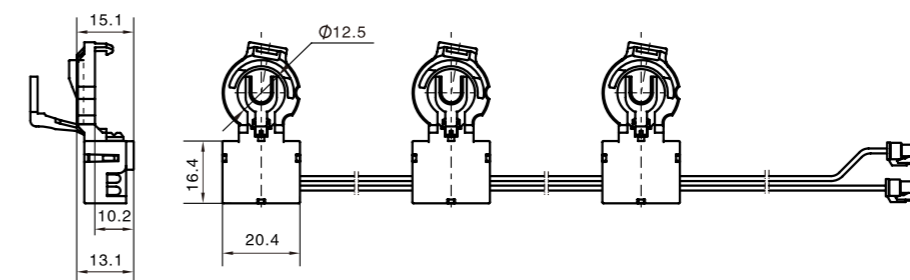


型號 Model	PS8/2-BG-□-□
OF Max(N)	8.5
OP(mm)	15.7 ± 0.5
FP Max(mm)	17 ± 0.2
TTP (mm)	14 ± 0.3

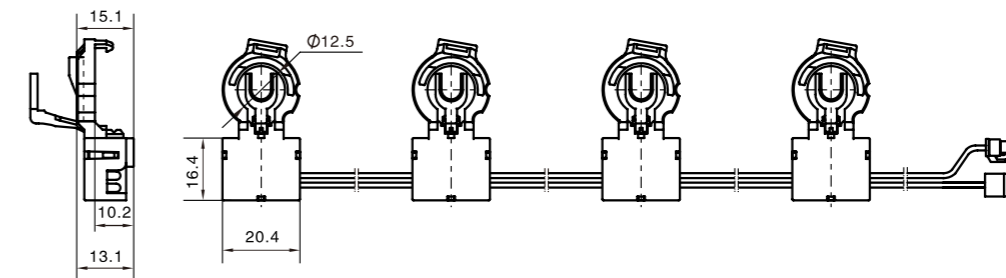
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◆ 外形尺寸和動作特性 Dimensions and operating characteristics

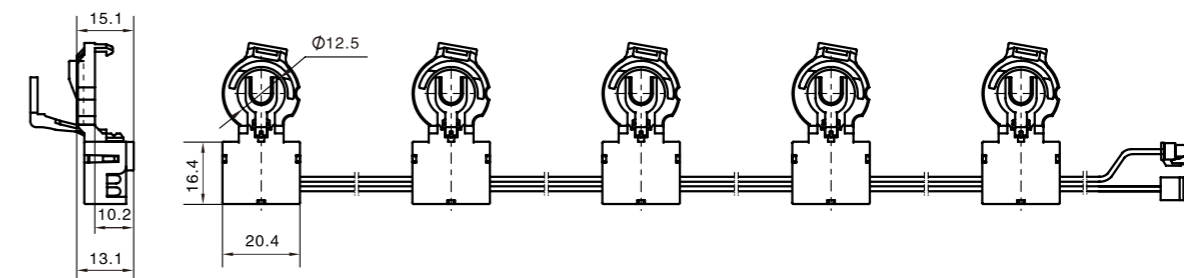
PS8/3-AB-□-□



PS8/4-AB-□-□



PS8/5-AB-□-□



型號 Model	OF Max(N)	OP(mm)	FP Max(mm)	TTP (mm)
PS8/3-AB-□-□	8.5	15.7 ± 0.5	17 ± 0.2	14 ± 0.3
PS8/4-AB-□-□	8.5	15.7 ± 0.5	17 ± 0.2	14 ± 0.3
PS8/5-AB-□-□	8.5	15.7 ± 0.5	17 ± 0.2	14 ± 0.3

注：多聯開關組合按特定命名方法確定型號規格  
Note: the type specification of multi-connections switch combination is determined by specific naming method

## 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；廣泛應用於家用電器、冰箱和照明等。  
Long Life, high reliability, contact stability and reliability; widely used in household appliances, refrigerators and lighting and so on.
- 點接觸穩定可靠  
Point contact is stable and reliable



### ◆ 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	30 mm ~ 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	
絕緣電阻 Insulation resistance	≥ 100MΩ (500VDC)	
接觸電阻 Contact resistance	≤ 50mΩ	
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity	AC1000V, 50/60Hz, 1min
	帶電金屬零件與地(外殼)之間、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.	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 <sup>2</sup> (約100G approx.100G)max 誤動作 Wrong action: 300m/s <sup>2</sup> (約30G approx.30G)max	
外殼防護等級 Degree protection provided by enclosure	IEC IP54	
電氣壽命 Electrical Life	≥ 50,000次; cycles	
機械壽命 Mechanical Life	≥ 500,000次; cycles	

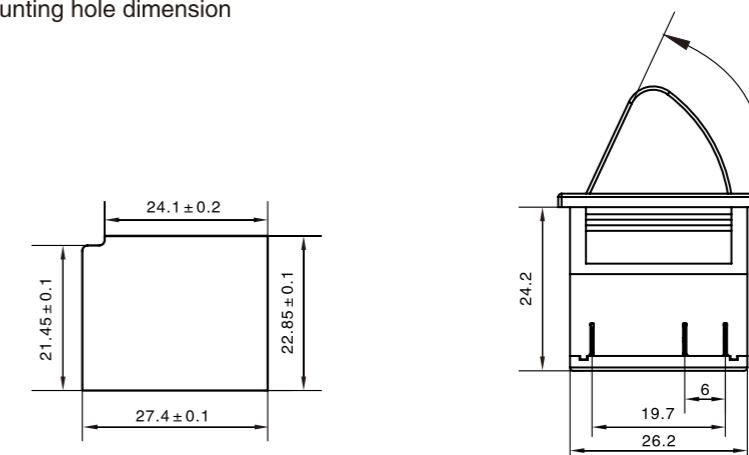
DONGNAN provide you professional micro switch solutions.

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

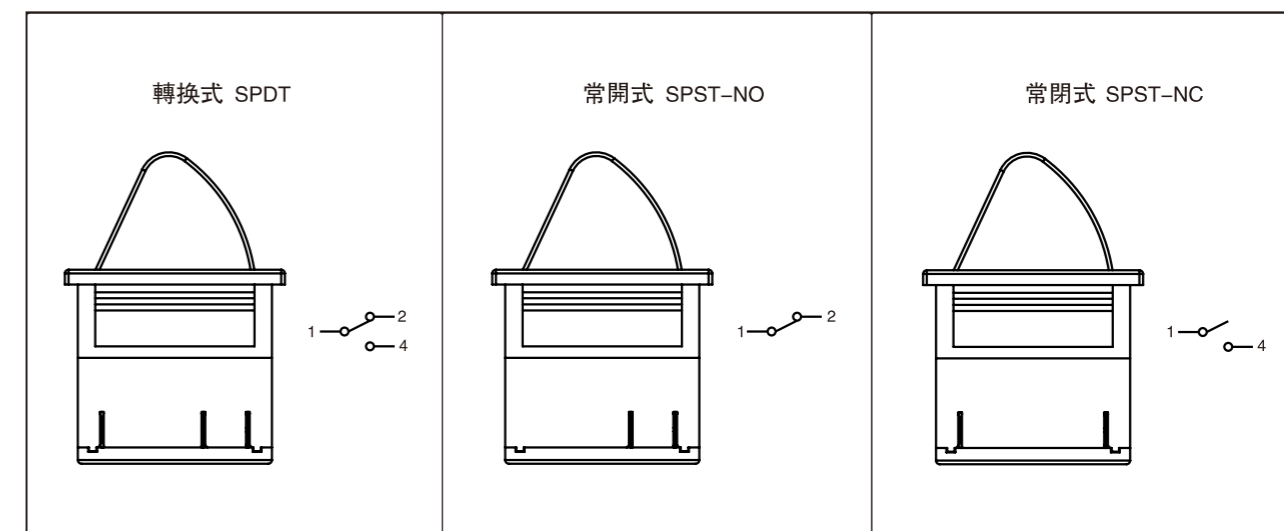
PS9 - □ □ - ( □ )  
1 2 3

<b>1</b> 接觸形式 Circuit	Z:轉換式 SPDT D:常閉(按斷)式 SPST-NC
<b>2</b> 端子類型 Terminal types	1: 187快接端子187# terminal 2: 其它端子 Other terminal
<b>3</b> 附加規格代號 Append specs code	特殊要求 (用兩位阿拉伯數字或字母表示) Special Requirements (Expressed in Arabic numerals or letters)

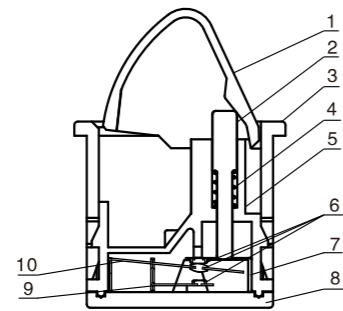
### ◆ 安裝孔尺寸 Mounting hole dimension



### ◆ 接觸形式說明圖 Circuit illustration

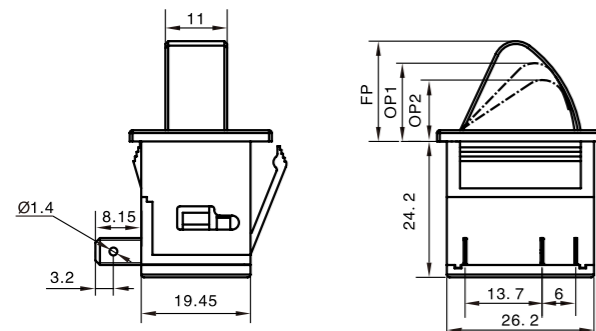


## ◆ 內部構造圖 Internal configuration drawing

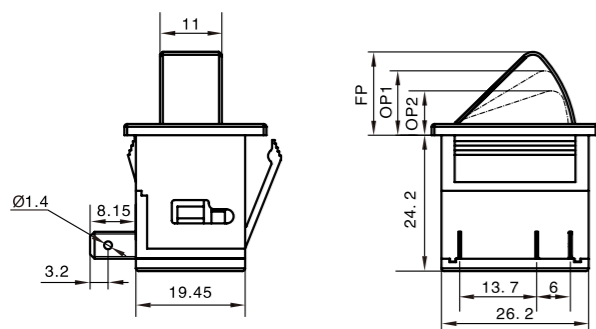


- |         |              |
|---------|--------------|
| 1: 按鈕   | Plunger      |
| 2: 開關子  | Contact      |
| 3: 外殼   | Cover        |
| 4: 壓簧   | Spring       |
| 5: 底座   | Case         |
| 6: 電觸點  | Contact      |
| 7: 常閉端子 | NC terminal  |
| 8: 底蓋   | Bottom cap   |
| 9: 常開端子 | NO terminal  |
|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

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

PS9-Z1  
(A型按鈕,標準款)

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型按鈕)

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

## ◆ 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.

- 各種接線端子型式  
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

- 廣泛應用於家用電器、電子設備、自動化設備及類似設備。

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



## ◆ 技術特性 Specifications

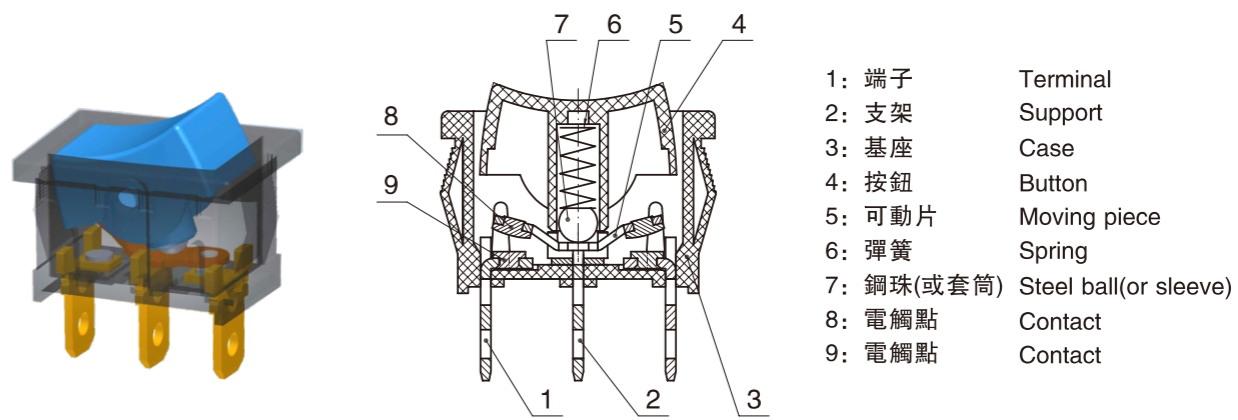
項目 Item	特性值 Value	
工作頻率 Operating Frequency	機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; electrical 25cycles/min	
絕緣電阻 Insulation resistance	≥ 100MΩ (500VDC)	
接觸電阻 Contact resistance	≤ 30mΩ (初始值 Initial value)	
耐電壓 Test voltage	同極不相接端子間 Between not connect terminals of the same Polarity	AC1500V, 50/60Hz, 1min
	帶電金屬零件與地(外殼)之間、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.	AC1500V, 50/60Hz, 1min
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm雙振幅 Double amplitude	
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

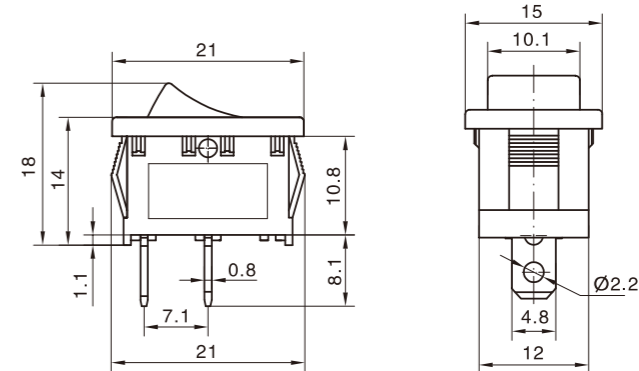
<b>1</b> 溫度等級 Degrees of temperature	無標記 No mark: T85	<b>5</b> 端子類型 Terminal types	0: 焊接端子 Solder terminal 1: 187#快接端子 Quick-connect terminal (thick 0.8mm) 2: 187#快接端子 Quick-connect terminal (thick 0.5mm) 3: PCB端子 Terminal 4: 左彎PCB端子 Left side PCB terminal 5: 右彎PCB端子 Right side PCB terminal 6: 非標準端子 Not standard terminal
<b>2</b> 額定值 Ratings	10: 10(3)A250VAC /10.1A125VAC 06: 6(2)A250VAC /6A125VAC 01: 1(0.3)A250VAC /1A125VAC		<b>6</b> 按鈕顏色 Button color
<b>3</b> 轉換方式 Conversion type	A: ON-OFF B: ON-ON C: ON-OFF-ON (見說明圖 see illustration)	<b>7</b> 外殼顏色 Cover color	B: 黑色black
<b>4</b> 按鈕標記 Button mark	(見說明圖) (see illustration)	<b>8</b> 附加代號 Additional specs numbers	用01、02、03……表示。適用於: 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

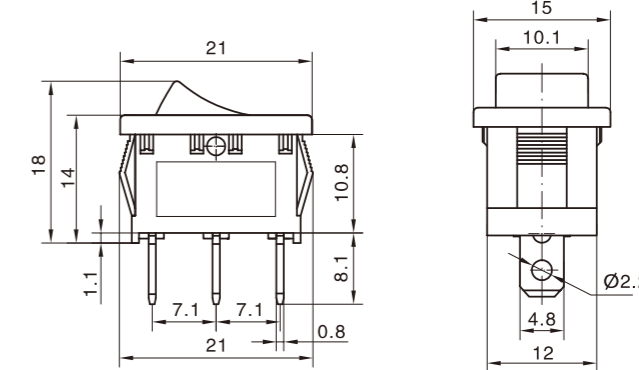
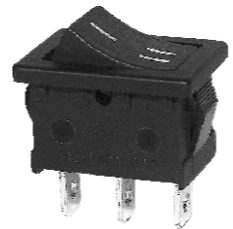


◆ 外形特徵圖 Outline characteristics drawing

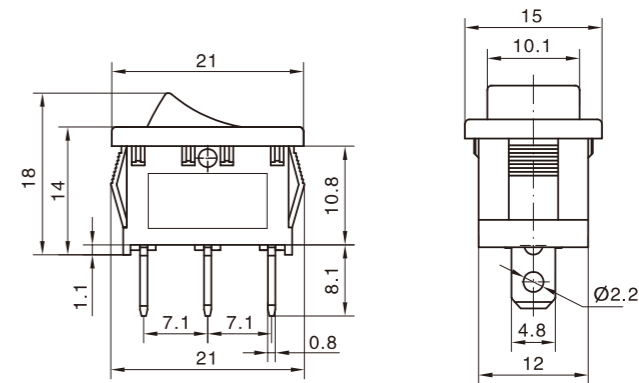
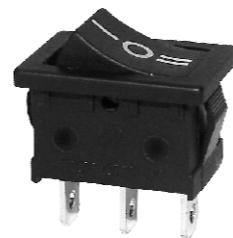
RS1□-□A3-1BB



RS1□-□B4-1BB



RS1□-□C7-1BB



◆ 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	≡ H O	ON-OFF	8	I O II	ON-OFF-ON
4	- =	ON-ON	9	≡ 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

## 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.
- 多種接線端子型式  
A variety of contacts terminals
- 廣泛應用於家用電器、電子設備、自動化設備及類似設備。  
Widely used in home appliances, electric equipments, automatization equipments and 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 (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
	帶電金屬零件與地(外殼)之間、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm雙振幅 double amp litude
電氣壽命 Electric life	50,000次/cycles
安全認證 Safety approvals	UL、CUL、ENEC、DEMKO

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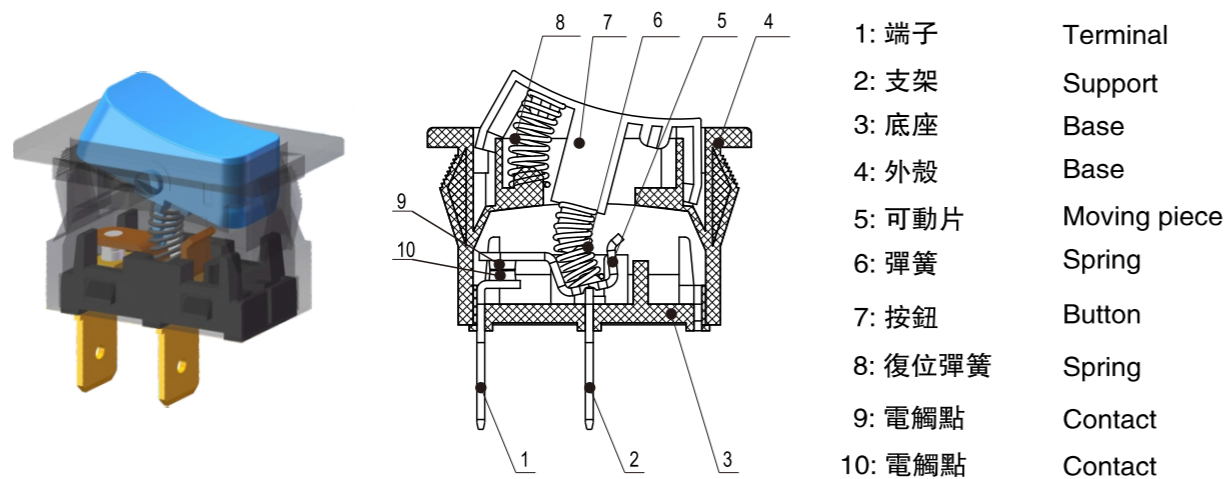
### ◆ 型號規格命名及含義 Model number legend and meanings

RS2 - □□□□□□  
1 2 3 4 5 6

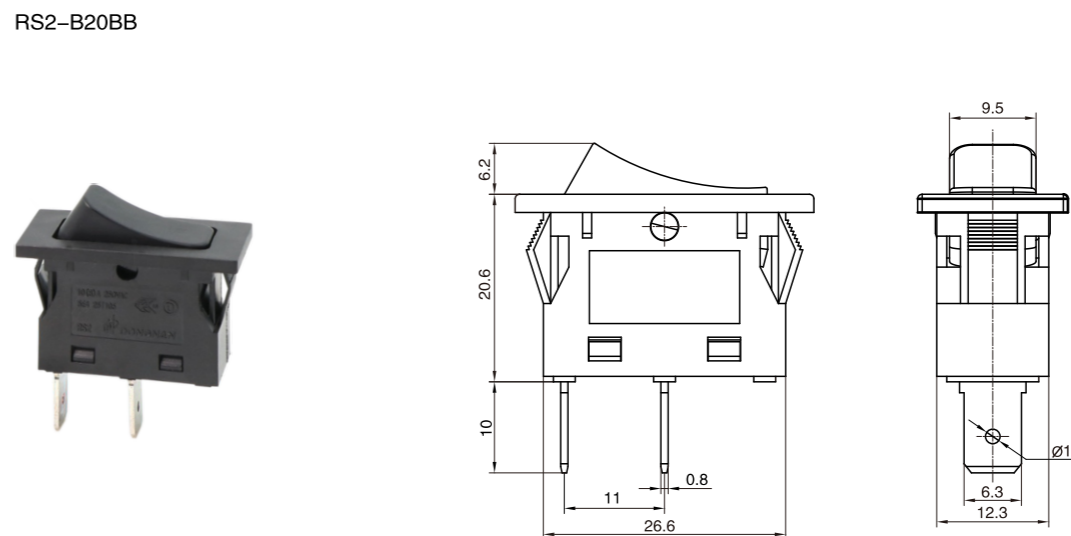
<b>1</b> 轉換方式 conversion type	A: ON-OFF自復位至OFF B: ON-OFF自復位至ON C: ON-OFF D: ON-ON自復位 E: ON-ON (見說明圖see illustration)	<b>4</b> 按鈕顏色 button color	B:黑色black
<b>2</b> 端子類型 terminal types	0:焊接端子solder terminal 1:250#快接端子(t 0.8) 250quick-connect terminal 2:187#快接端子(t 0.8) 187quick-connect terminal 3:187#快接端子(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	<b>5</b> 外殼顏色 Enclosure color	B:黑色black
<b>3</b> 按鈕標記 button mark	0 ~ 9 (見說明圖see illustration)	<b>6</b> 附加代號 Additional specs numbers	用01、02、03……表示。適用於: 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.

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◆ 内部構造圖 Internal configuration drawing



◆ 外形特徵圖 Outline characteristics drawing



◆ 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		ON-OFF
2		ON-OFF
3		ON-OFF
4		ON-ON
5		ON-ON
6		ON-ON
7		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

## 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.

- 多種接線端子型式

A variety of contacts terminals

- 廣泛應用於家用電器、電子設備、自動化設備及類似設備。

Widely used in home appliances, electric equipments,

automatization equipments and 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	
絕緣電阻 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、接線 端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.	AC1500V, 50/60Hz, 1min
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm雙振幅 double amplitude	
電氣壽命 Electric life	50,000次/cycles	
安全認證 Safety approvals	UL、CUL、ENEC	

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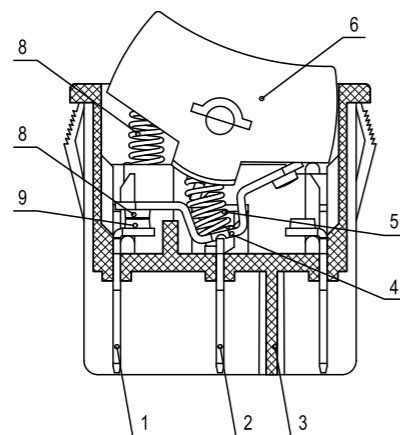
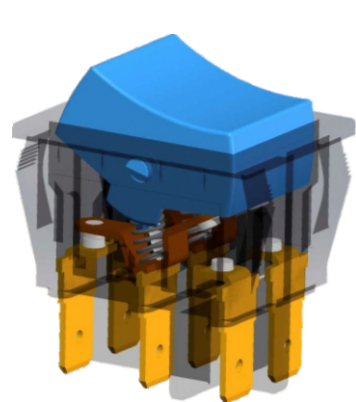
### ◆ 型號規格命名及含義 Model number legend and meanings

RS3 - □□□□□□  
1 2 3 4 5 6

<b>1</b> 轉換方式 conversion type	A: ON-OFF自復位至OFF B: ON-OFF自復位至ON C: ON-OFF D: ON-ON自復位 E: ON-ON (見說明圖see illustration)	<b>4</b> 按鈕顏色 button color	B:黑色black
<b>2</b> 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	<b>5</b> 外殼顏色 Enclosure color	B:黑色black
<b>3</b> 按鈕標記 button mark	(見說明圖see illustration)	<b>6</b> 附加代號 Additional specs numbers	用01、02、03……表示。適用於: 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.

提供安全、可靠的通斷服務，讓電器更完美

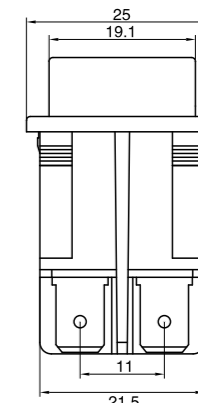
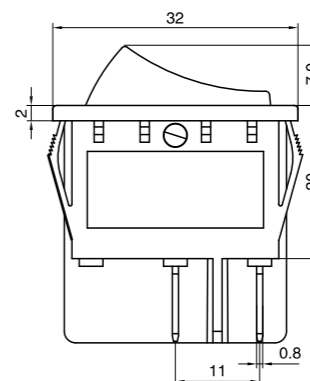
◆ 内部構造圖 Internal configuration drawing



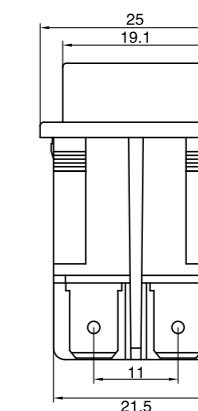
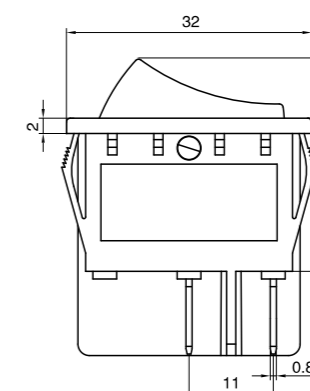
- 1: 端子 Terminal
- 2: 支架 Support
- 3: 底座 Base
- 4: 可動片 Moving piece
- 5: 彈簧 Spring
- 6: 按鈕 Button
- 7: 復位彈簧 Spring
- 8: 電觸點 Contact
- 9: 電觸點 Contact

◆ 外形特徵圖 Outline characteristics drawing

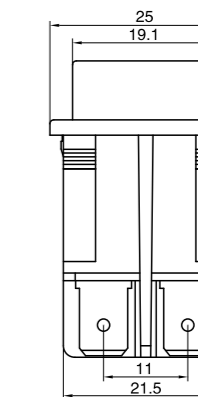
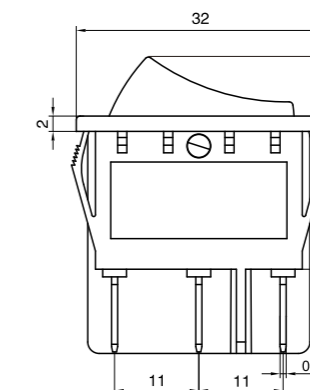
RS3-B21BB



RS3-C20BB



RS3-D20BB



◆ 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		ON-OFF
2		ON-OFF
3		ON-OFF
4		ON-ON
5		ON-ON
6		ON-ON
7		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



## RS4型船形開關系列 Rocker Switch series

### ◆ 特點和用途 Characteristics and usage

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



### ◆ 技術特性 Specifications

項目 Item	特性值 Value	
溫度等級Degrees of temperature	T85/55	
額定值Rating	8A 250VAC; 16A 125VAC (UL) 12(10)A 250VAC (TUV)	
動作力Operating force	0-1: 5.5±1.5N; 1-2: 7.5±1.5N	
工作頻率 Operating Frequency	機械 60次/min; 電氣 20次/min Mechanical 60 cycles/min; electrical 20 cycles/min	
絕緣電阻 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 terminals of the same polarity	AC1500V, 50/60Hz, 1min
	帶電金屬零件與地(外殼)之間、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground (case), and between each terminal and non-current-carrying metal parts.	AC1500V, 50/60Hz, 1min
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm 雙振幅 Double amplitude	
電氣壽命 Electrical life	10,000次cycles	
安全認證 Safety approvals	UL、TUV、	

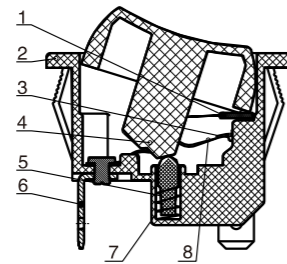
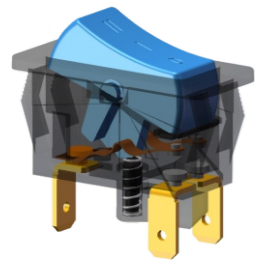
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### ◆ 型號規格命名及含義 Model number legend and meanings

RS4 - □ □ □ □ □ - ( □ )  
1 2 3 4 5 6

<b>1</b> 轉換方式 Conversion type	無標記No mark: OFF-ON-ON	<b>4</b> 按鈕顏色 Button color	B:黑色Black G:灰色Grey W:白色White B:藍色Blue R:紅色Red Y:黃色Yellow
<b>2</b> 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	<b>5</b> 外殼顏色 Enclosure color	無標記No mark:黑色Black W:白色White R:紅色Red G:灰色Grey B:藍色Blue Y:黃色Yellow
<b>3</b> 按鈕標記 Button mark	1,2 (見說明圖see illustration)	<b>6</b> 附加規格代號 Append specs code	用01、02、03……表示。適用於: 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.

## ◆ 内部構造圖 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 piec     |

## ◆ 按鈕標記說明圖 Button mark illustration

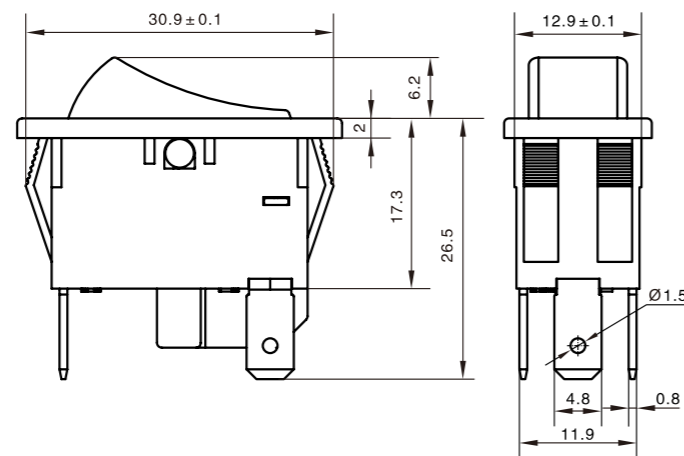
代號 Code	按鈕標記 Button mark	標記含義 mark signification
1		OFF-ON-ON
2		OFF-ON-ON

## ◆ 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



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## ◆ SS5型拔動開關系列 Toggle switch series

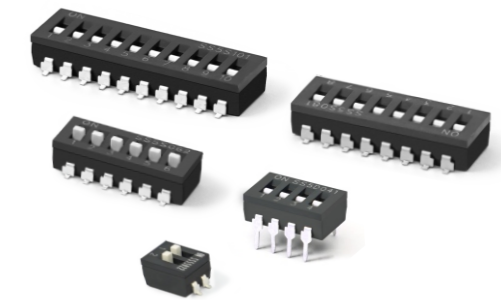
## ◆ 特點和用途 Characteristics and usage

- 結構緊湊，體積小；接觸穩定；廣泛應用於計算機主板的超頻、無線通訊、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 equipment.

- 點接觸穩定可靠

Contacts are stable and reliable.



## ◆ 技術特性 Specifications

項目 Item	特性值 Value	
環境溫度 Environment temperature	-30 ~ +85°C	
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、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground (case), and between each terminal and non-current-carrying metal parts.	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 <sup>2</sup> (約100G approx.100G)max 誤動作 Wrong action: 300m/s <sup>2</sup> (約30G approx.30G)max	
外殼防護等級 Degree protection provided by enclosure	IEC IP00	
電氣壽命 Electrical Life	≥ 1,000次cycles	
機械壽命 Mechanical Life	≥ 1,000次cycles	

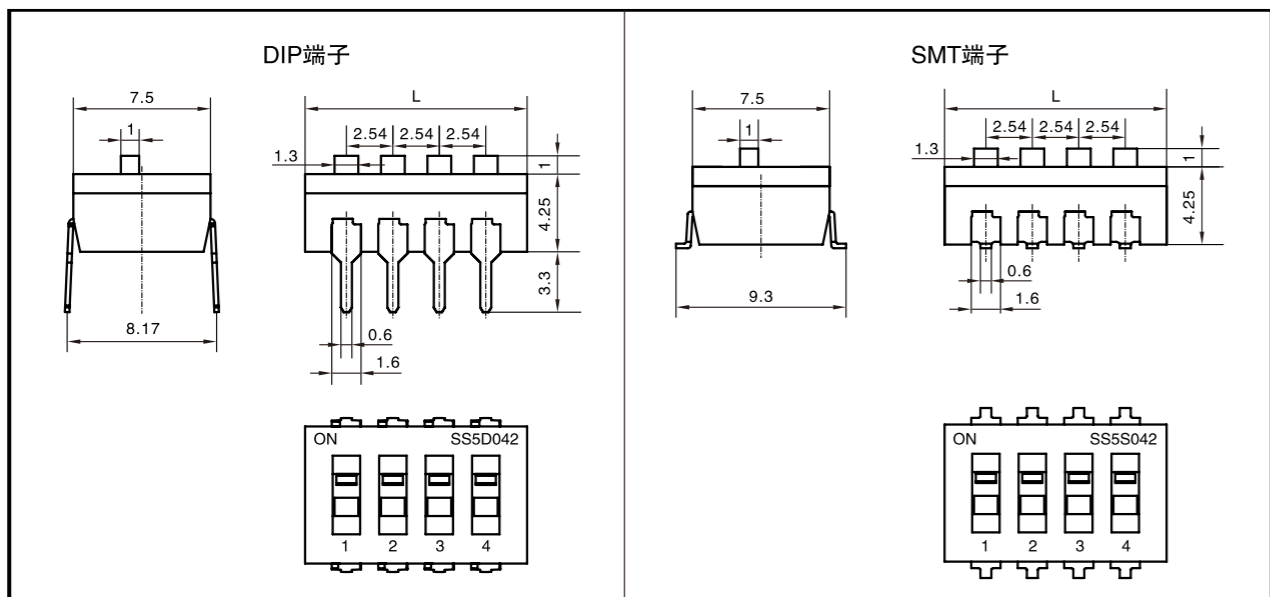
注：指無動臂時按鈕上的動作力。 Note: Refers to the operating force of no lever.

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

SS5 - □□ - □ - □ - (□)  
 1 2 3 4 5

<b>1</b> 接觸形式 Circuit	D:直插式DIP S:貼片式 SMT	<b>4</b> 額定值 Rating	無標記: 鍍銀 Unmarked Silver plated A:鍍金 Gold plated
<b>2</b> 極數 Pole number	02, 03, 04.....10, 12 (Expressed in Arabic numerals)	<b>5</b> 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)
<b>3</b> 按鈕類型 Plunger spec	1: 低型 low 2: 高型 high		

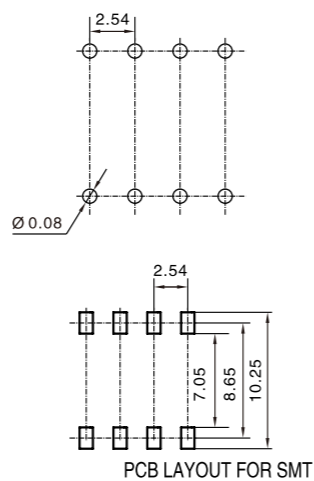
◆ 接觸形式說明圖 Circuit illustration



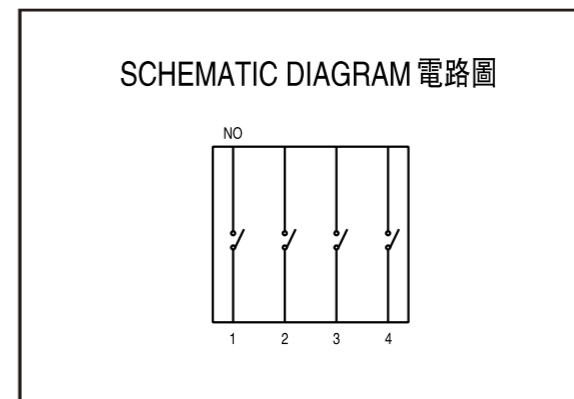
◆ 接觸形式說明圖 Circuit illustration

針腳數量	名稱	L (mm)
1	/	/
2	SS5-2	7.06
3	SS5-3	9.06
4	SS5-4	12.14
5	SS5-5	14.68
6	SS5-6	17.22
7	SS5-7	19.76
8	SS5-8	22.30
9	SS5-9	24.84
10	SS5-10	27.38
11	/	/
12	SS5-12	32.5

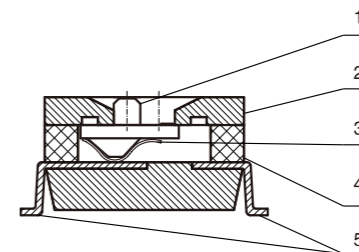
Attachment hole dimension for DIP



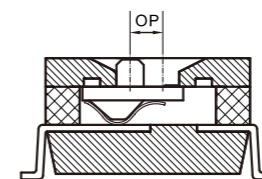
◆ 接線端尺寸 Connect terminal dimensions



◆ 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



OPERATING FORCE 動作力(OF)	9.8N MAX
ACTION STROKE 動作行程	1.2±0.1mm

## SP02型門控開關 Gating control switch

### ◆ 特點和用途 Characteristics and usage

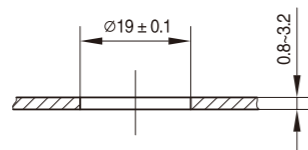
- 按鈕式開關，結構緊湊，安裝方便。  
Push plunger power switch, tight configuration, convenient to mount
- 接觸可靠，工作壽命長  
Contact reliable, long operating life
- 用于電烤箱及類似設備的門控。  
Can be Used as gating switch in electronic oven and other similar equipments



### ◆ 技術特性 Specifications

項目 Item		特性值 Value
環境溫度 Environment temperature		0 ~ 200°C
相對濕度 Relative humidity		95%, 40°C
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
絕緣電阻 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 15 g Approx. 15g
安全認證 Safety approvals		UL、CUL

### ◆ 安裝孔尺寸 Mounting hole dimensions



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### ◆ 外形尺寸 Outline dimensions

SP02-Z		<p>電路圖 Circuit diagram</p>
SP02-T		<p>電路圖 Circuit diagram</p>
SP02-D		<p>電路圖 Circuit diagram</p>
SP02-S		<p>電路圖 Circuit diagram</p>

## KXZ2旋轉開關系列

### ◆ 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 Specifications

項目 Item	特性值 Value	
環境溫度 Environment temperature	-25 ~ +105°C	
相對濕度 Relative humidity	95%, 40°C	
額定電流/電壓 Rated current / voltage	8GPA125VAC, 6(3)A250VAC	
旋轉角度 Rotary angle	45° /檔 place; 36° /檔 place; 30° /檔 place	
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	

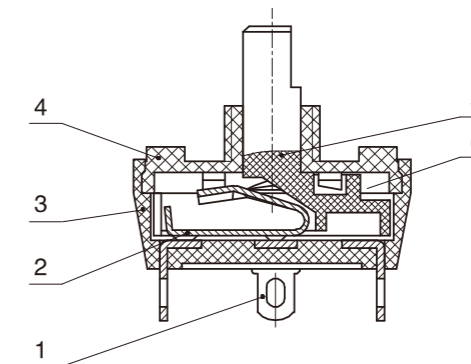
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### ◆ 型號規格命名及含義 Model number legend and meanings

KXZ2-□□□-□□-(□)  
1 2 3 4 5 6

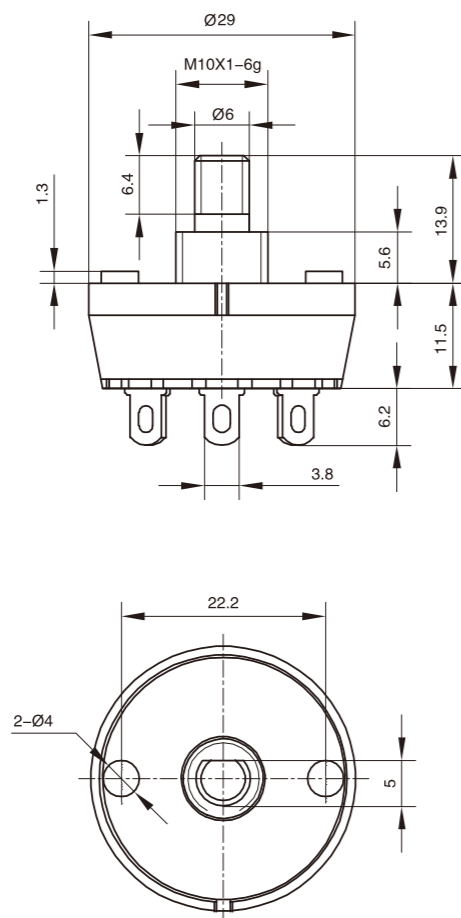
1 外形特徵 Outline characteristics	A:換檔角度45° Shifting rotation angle 45° 軸長8 Axis length 8	3 端子規格 Terminal specs	A:3.8×0.8×5.5 B:2.4×0.8×5.5	
	B:換檔角度45° Shifting rotation angle 45° 軸長13.5 Axis length 13.5			
2 功能代號 Function code	C:換檔角度30° Shifting rotation angle 30° 軸長8 Axis length 8	4 空檔位代號 Neutral position code	00: 無空檔 No neutral position 0□: □#為空檔位 □# is neutral position 注: 空檔位可以有幾個 Note: Can have several neutral position	
	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		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
	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 end not included in the terminals number	6 附加代號 Append specs code	適用於 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								

## ◆ 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.

- 廣泛應用於洗碗機,垃圾粉碎機,淨水機等家用電器的配套。

Widely used in dishwasher, garbage crusher, water purifier and other household 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	
絕緣電阻 Insulation resistance	冷態 $\geq 100M\Omega$ (500VDC); 潮態 $\geq 10M\Omega$ (500VDC) Cold state $\geq 100M\Omega$ (500VDC); Tidal state $\geq 10M\Omega$ (500VDC)	
接觸電阻 Contact resistance	$\leq 50m\Omega$	
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity	AC1000V, 50/60Hz, 1min
	帶電金屬零件與地(外殼)之間、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.	AC1500V, 50/60Hz, 1min
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm雙振幅 Double amplitude	
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 $\geq 15,000$ 次; Electrical $\geq 15,000$ cycles	

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

AS1□□-□□-□□-(□)  
1 2 3 4 5 6 7

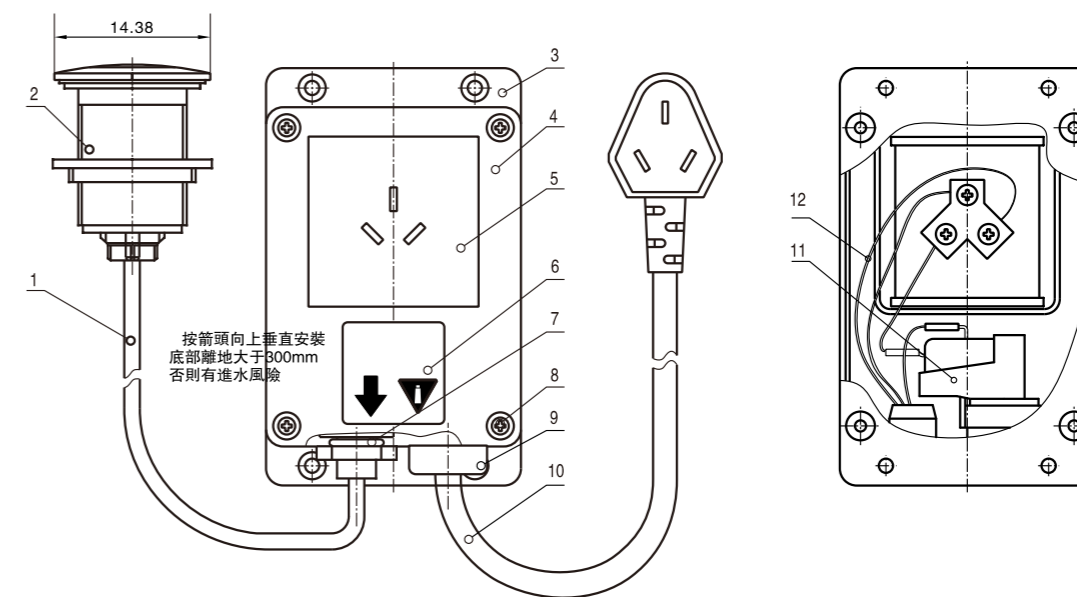
<p><b>1</b> 插孔類別代號 Jack category code</p>	<p>A—國標 National standard B—歐標/德標 European standard/German standard C—美標 American Standard D—法標 Legal standard E—英標 British Standard F—澳標 Australian Standard</p>	<p><b>4</b> 外殼結構特徵代號 Shell structure characteristic code</p>	<p>2個三插ST-A02-003K, 1個兩插ST-A02-002C Cuboid, 156 × 76 × 95 black; Two three plug ST-A02-003K, one two plug ST-A02-002C</p>
<p><b>2</b> 插座額定值代號 Socket rating code</p>	<p>10—10A 250VAC</p>	<p><b>5</b> 氣動按鈕規格代號 Specification code of pneumatic button</p>	<p>A—ANQ1-B32B-850</p>
<p><b>3</b> 微動開關規格代號 Specification code of microswitch</p>	<p>A—KW3AT-E21T0B-A200B</p>	<p><b>6</b> 電源插頭特徵代號 Characteristic code of power plug</p>	<p>1—國標3插, 黑色導線53RVV, 綫長950 ± 50mm 2—LBY-16(220VAC, 10A連體漏電插頭), 國標3插, 黑色導線53RVV, 綫長1500 ± 50mm</p>
<p><b>4</b> 外殼結構特徵代號 Shell structure characteristic code</p>	<p>1—長方體, 123 × 75 × 54.5 黑色; 1個三插 Cuboid, 123 × 75 × 54.5 black; One triple plug 2—長方體, 156 × 76 × 95 黑色;</p>	<p><b>7</b> 附加代號 Additional code</p>	<p>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……</p>

◆ 內部構造圖 Internal configuration drawing

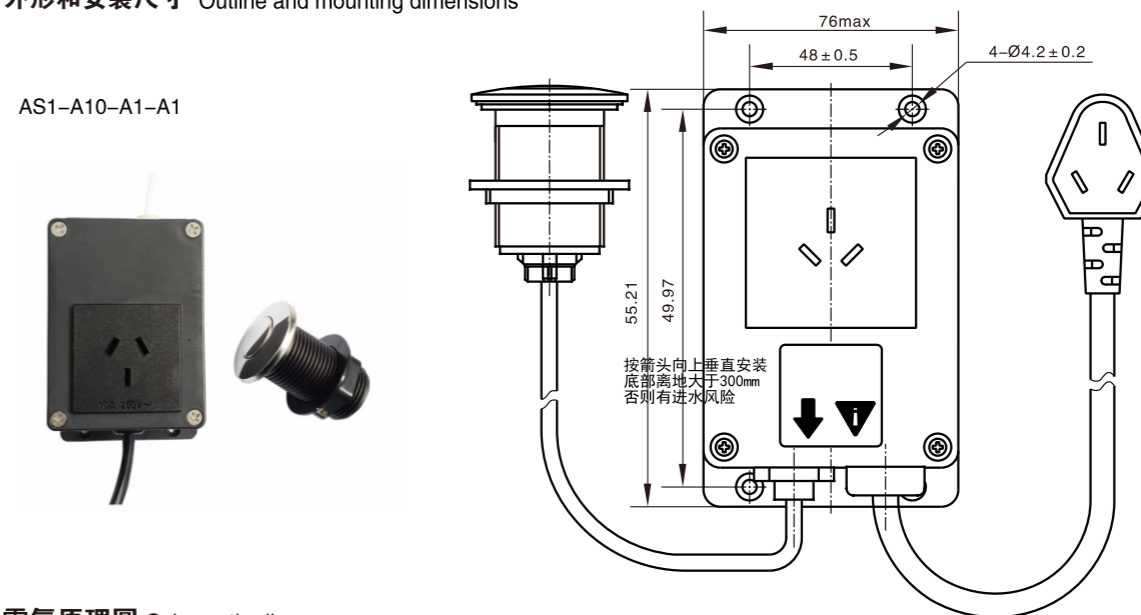


- 1: PVC氣管 PVC trachea
- 2: 氣動按鈕 Pneumatic button
- 3: 基座 Case
- 4: 蓋 Cover
- 5: 插座 Socket
- 6: 標識卡 Identification card
- 7: O形圈 O-ring
- 8: 自攻螺釘 Self tapping screw
- 9: 綫扣 Cord buckle
- 10: 電源綫 Power cord
- 11: 氣動壓力開關 Pneumatic pressure switch
- 12: 導綫組件 Wire assembly

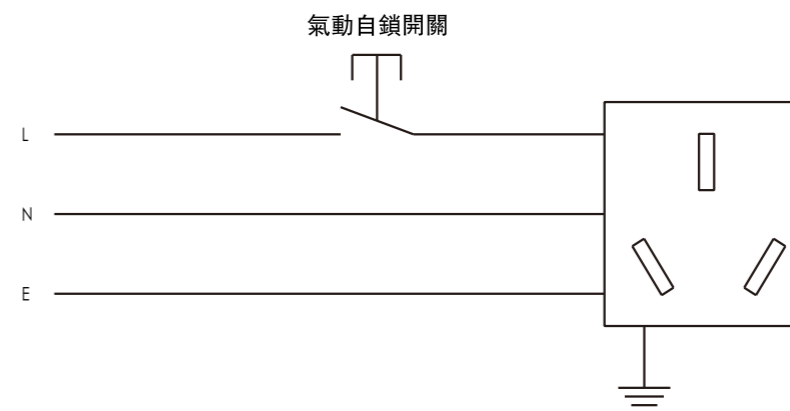
— 見下頁



◆ 外形和安裝尺寸 Outline and mounting dimensions



◆ 電氣原理圖 Schematic diagram



提供安全、可靠的通斷服務, 讓電器更完美

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

### ◆ 請正確使用 Please use it correctly

【共通注意事項】請參閱相關頁

[ Common use ] please refer to related pages

#### ■ 關於使用 Concerning the using

(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) 對於低荷重型開關，由於其構造特殊，請注意不要讓開關跌落，以免損壞內部結構。

About the low operating force switches, please do not drop the switch so as to avoid damage to inside structure, because it is of special structure.

#### ■ 關於安裝 Concerning the installation

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

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

(2) 安裝時，使用2個M3螺釘，用平墊圈、彈簧墊圈等緊固，並請使用0.4~0.6N·m的緊固轉矩。

When installing, please use 2 M3 screws, then tight it with flat washer, spring washer, and also tight with 0.4~0.6N·m torque.

(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.

#### ■ 關於絕緣距離 Concerning insulation distance

根據IEC 61058-1/EN 61058-1/GB 15092.1之規定，本開關的最小絕緣層厚度為1.1mm，端子和安裝板之間的最小空間距離為1.9mm。如果無法確保零部件所要求的絕緣距離，請使用絕緣護罩或隔板來保證絕緣距離。

According to IEC 61058-1/EN 61058-1/GB 15092.1, the least thickness insulation layer should be 1.1mm, the smallest space distance between the terminal and install board is 1.9mm. If the parts insulation distance cannot be guaranteed, please use insulate cover or guard board to guarantee the insulation distance.

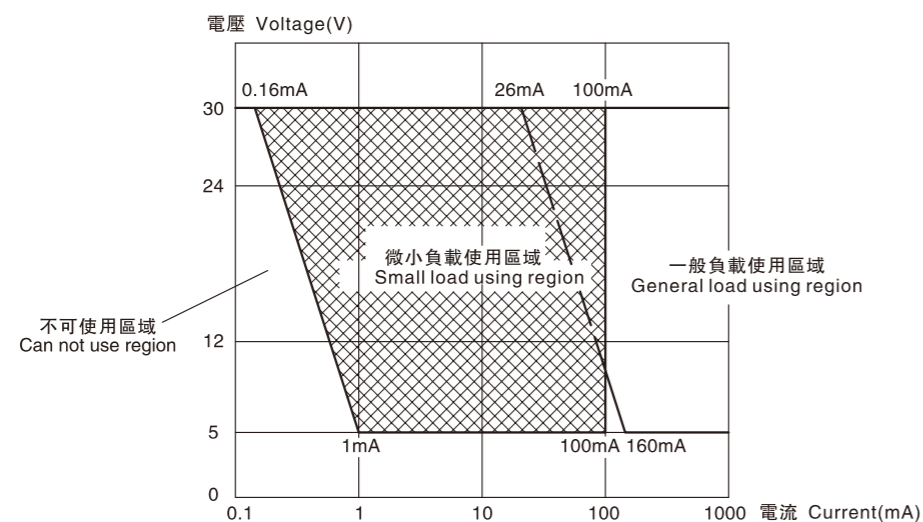
#### ■ 關於微小負載電路中的使用 Concerning use in small load circuit

如果在開關微小負載電路中使用一般負載用開關，可能會引起接觸不良。

Use general load switch in small load circuit, bad contact may happen

請參考下圖在使用區域的範圍內使用開關，並根據需要插入觸點保護電路。

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



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

DONGNAN provide you professional micro switch solutions.

### 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.

■ 主要應用於垃圾處理器、按摩浴缸等開關控制用。

It is mainly used for garbage disposal, massage bathtub and other switch control.



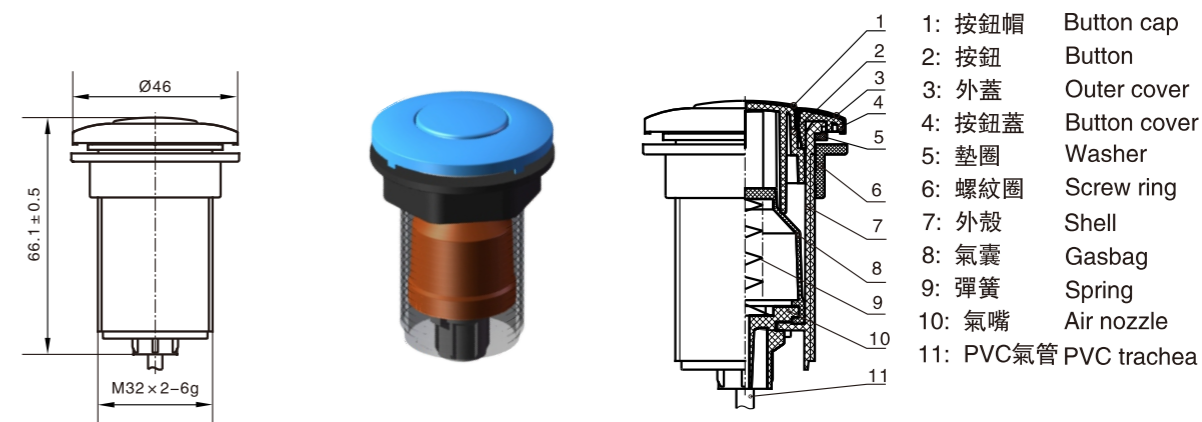
#### ◆ 型號規格命名及含義 Model number legend and meanings

ANQ1-□□□-□-(□)  
1 2 3 4 5

<b>1</b> 外蓋材質代號 Material code of outer cover	H—黃銅 Brass B—不銹鋼 Stainless steel	<b>4</b> 尾部有無帶氣管代號 Does the tail have the code of air pipe	○—無氣管 No trachea □—氣管長度(毫米數) Length of trachea (mm)
<b>2</b> 外殼螺紋代號 Shell thread code	32—M32×2 28—M28×2	<b>5</b> 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……
<b>3</b> 外殼顏色代號 Shell color code	W—白色 White B—黑色 Black		

#### ◆ 外形和安裝尺寸 Outline and mounting dimensions ◆ 內部構造圖 Internal configuration drawing

ANQ1-B32B-□



- 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

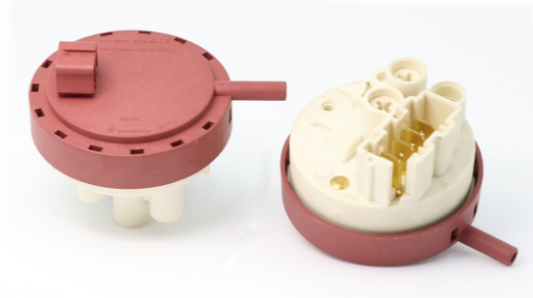
提供安全、可靠的通斷服務，讓電器更完美



## PRS1 型壓力開關系列 Pressure Switch series

### ◆ 特點和用途 Characteristics and usage

- 結構緊湊可靠，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
- 多種動作壓強  
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°C ~ 85°C
相對濕度 Relative humidity	95%, 40°C
絕緣電阻 Insulation resistance	≥ 100MΩ ; 試驗後 After testing ≥ 50MΩ (500VDC)
接觸電阻 Contact resistance	≤ 50mΩ ; 試驗後 After testing ≤ 200 mΩ
耐電壓 Test voltage	同極不相接端子間 Between terminals of the same polarity
	帶電金屬零件與地(外殼)之間、接線端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts.
抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm 雙振幅 double amplitude
防觸電保護等級 Electric shock proof protection grade	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°C/2s
電氣壽命 Electrical life	≥ 20,000 次 cycles
安全認證 Safety approvals	UL、CUL、TUV、CE

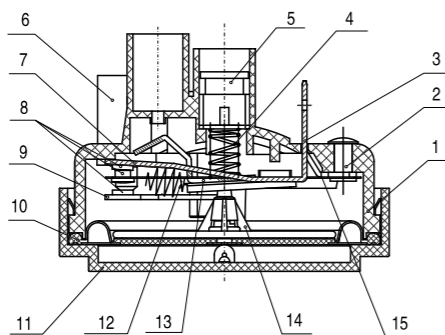
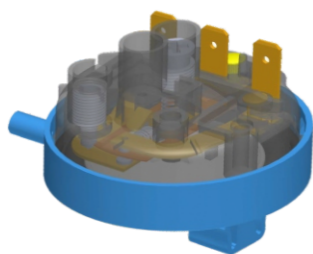
### ◆ 型號規格命名及含義 Model number legend and meanings

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 動作壓強 / 復位壓強 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 numbers	用 01、02、03 ……表示。適用於: 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 3) 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.

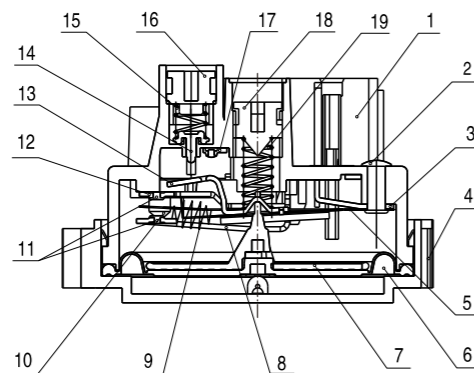
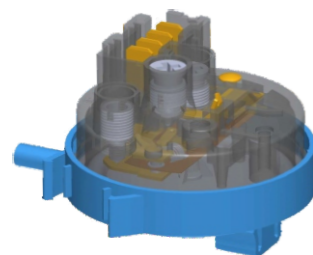
◆ 内部構造圖 Internal configuration drawing

普通式 Ordinary type



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

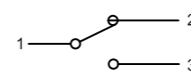
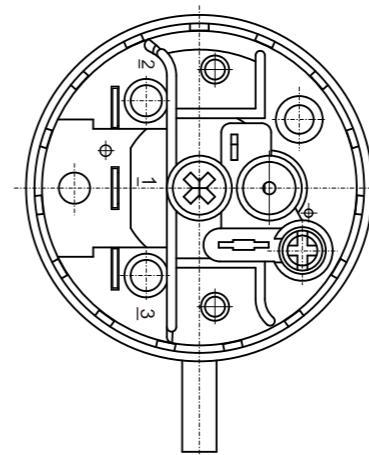
插座式 Socket type



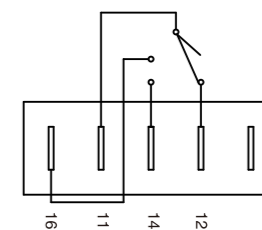
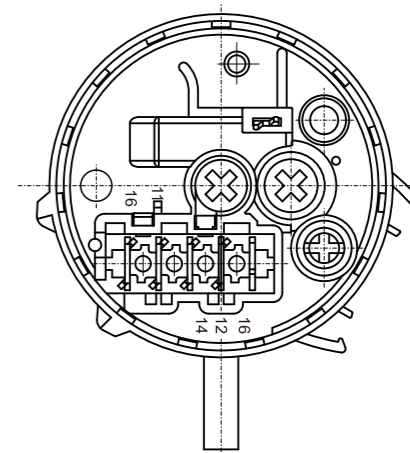
- |           |                  |
|-----------|------------------|
| 1: 外殼     | Case             |
| 2: 鉚釘     | Rivet            |
| 3: 端子     | Terminal         |
| 4: 蓋      | Cover            |
| 5: 可動片    | Moving piece     |
| 6: 密封件    | Seal element     |
| 7: 推盤     | Support          |
| 8: 常開端子   | NO terminal      |
| 9: 壓簧     | Spring           |
| 10: 靜件螺桿  | 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: 支架螺桿  | Support screw    |
| 17: 常開端子2 | NO termina 2     |
| 18: 動片螺桿  | SCREW            |
| 19: 彈簧    | Spring           |

◆ 接觸形式說明圖 Circuit illustration

普通式 Ordinary type



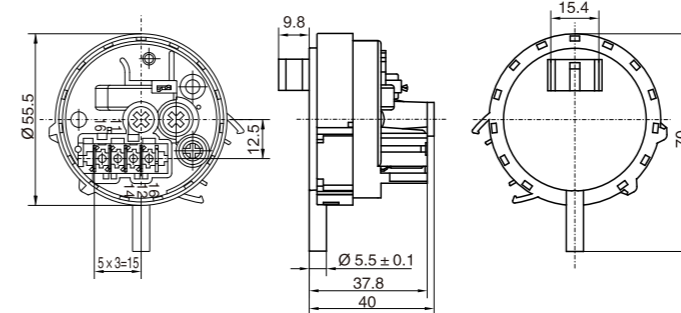
轉換式 SPDT



插座式 Socket type

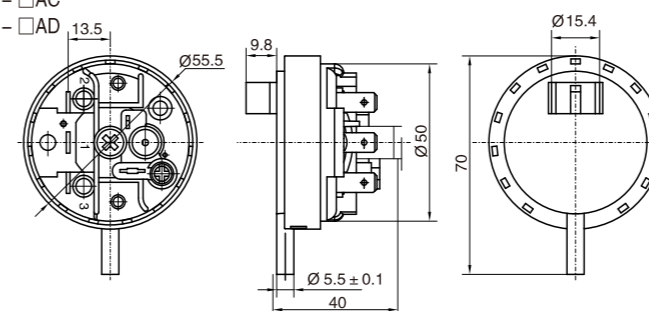
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

PRS1-□DE  
PRS1-□DF



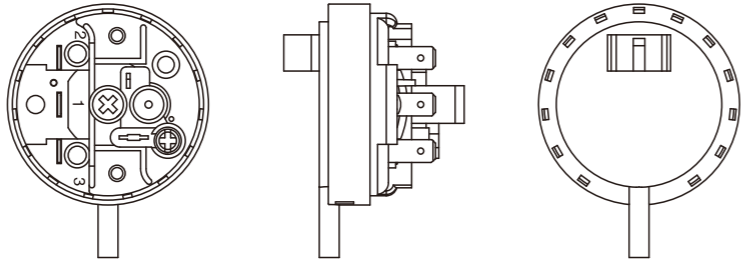
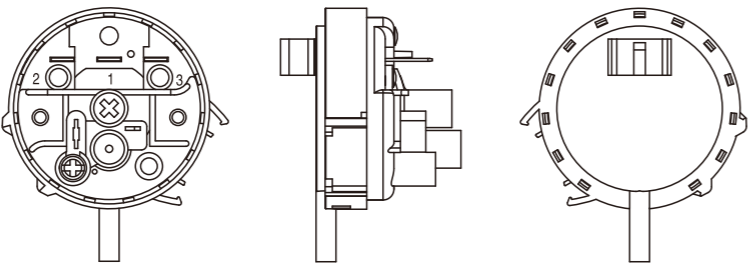
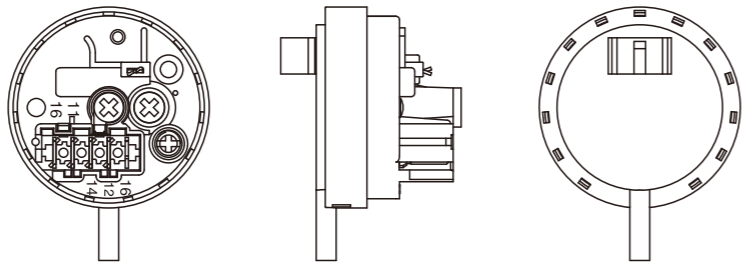
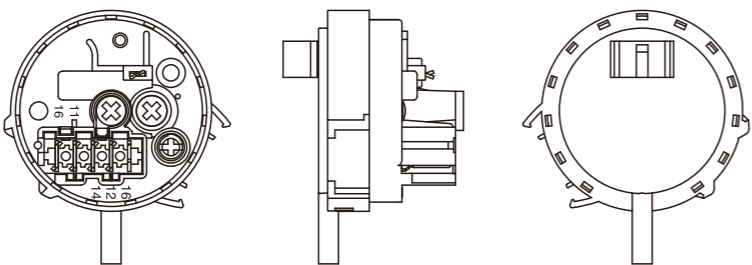
型號 Model	動作值 mmH <sub>2</sub> O Action value	復位值 mmH <sub>2</sub> O Reset value	溢流 mmH <sub>2</sub> O Overflow
PRS1-□DE	100 ± 3	78 ± 3	300 ± 25
PRS1-□DF	70 ± 3	50 ± 3	340 ± 25

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



型號 Model	動作值 mmH <sub>2</sub> O Action value	復位值 mmH <sub>2</sub> O 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

◆ 結構型式說明圖 Structural style illustration

<p>普通式 無卡扣 Ordinary type without buckle</p>	
<p>普通式 有卡扣 Ordinary type with buckle</p>	
<p>插座式 無卡扣 Socket type without buckle</p>	
<p>插座式 有卡扣 Socket type with buckle</p>	

# 东南电子微动开关选型图

微动开关		防水开关	衍生产品
<p><b>大微动</b> 安装孔基本一致 长宽定位孔: 22.2X10.3</p> <p>MS10 簧片、弹簧复合结构</p> <p>10T105 簧片结构</p> <p>MS1 拉簧结构</p>	<p>T200 25A T150 22A 10T125 21A</p> <p>更轻动作力</p> <p>更高温度</p> <p>更大电流</p>	<p>IP67</p> <p>WS2 机构同KW3A 密封圈+灌胶</p>	<p>KW3A衍生产品</p> <p>自锁式</p> <p>防倾倒式</p>
<p><b>中微动</b> 长宽高: 19.8X6.4X10.2 安装孔: 9.6</p> <p>MS2 在原MS2基础上加装防尘帽 防尘效果更佳</p> <p>MS2 等脚距安装 防尘槽设计 拉簧结构</p> <p>MS3 自锁式 专为水位控制定制</p>	<p>最高电流10A</p> <p>防尘需求</p> <p>KW4A 簧片结构 高灵敏度 抗振动性好</p> <p>KW4A(S) 拉簧结构</p> <p>WS4-IP40 外壳平行端子设计 更有利于自动化焊接</p>	<p>WS7 可在建筑门窗控制装置、车库门、电机控制、工业控制设备中使用。</p> <p>WS1 密封圈+超声波焊接</p> <p>WS4 外壳防带臂过行程</p>	<p>WS8 超小体积、微电流、防水防尘 汽车适用</p> <p>WS6 OP稳定、微电流 适用于汽车门锁及电灯门 防爆认证</p>
<p><b>小微动</b> 长宽高: 12.8X5.8X6.5 安装孔间距: 6.5</p>	<p>更小的开关</p> <p>KW10 簧片结构, 嵌件注塑 稳定性高</p>	<p>更小的开关</p> <p>WS3 簧片结构, 嵌件二次注塑 防水密封圈</p>	<p>WS5 多种外壳结构 提供更多安装方式</p>

