

KW10型微動開關系列 Micro switch series

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

- 超小型，大電流。具有微小觸點間隙，快速動作、高靈敏和微小動作行程的特點。
Mini-type, big current. Characteristic: small contact gap, quick action, high sensitivity and small operating travel

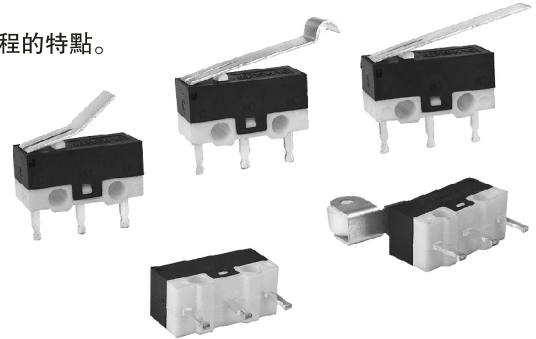
- 長壽命
Long life

- 多種接綫端子
A variety of contact terminals

- 多種形式動臂
A variety of levers

- 適用於家用電器、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 Specifications

| 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: ≤ 30mΩ (見注) 動作力≤0.75N : ≤ 50mΩ (見注) OF>0.75N: ≤ 30mΩ (see note) OF≤0.75N: ≤ 50mΩ (see note) KW10-D、E、F型: ≤ 100mΩ (見注) |
| 耐電壓 Test voltage | 同極不相接端子間 Between terminals of the same polarity | AC600V,50/60Hz, 1min |
| | 帶電金屬零件與地(外殼)之間、 接綫端與不帶電金屬件之間 Between current-carrying metal parts and ground(case), and between each terminal and non-current-carrying metal parts. | AC1000V,50/60Hz, 1min |
| 抗振動 Vibration resistance | | 10 ~ 55Hz, 1.5mm 雙振幅 Double amplitude |
| 抗衝擊 Shock resistance | | 故障: 300m/s ² (約30G)max Malfunction:300m/s ² (approx.30G)max |
| 壽命 Life expectancy | | 機械 ≥ 1,000,000次; Mechanical ≥ 1,000,000 cycles 電氣 ≥ 10,000次; Electrical ≥ 10,000cycles |
| 質量 Weight | | 約0.6g(無動臂型) Approx. 0.6g(No lever) |
| 安全認證 Safety approvals | | UL、CUL、TUV、CE、EK、CQC |

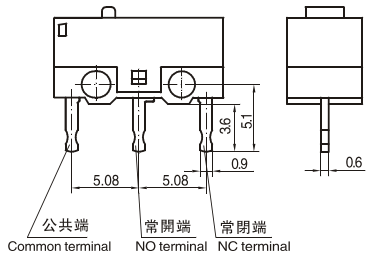
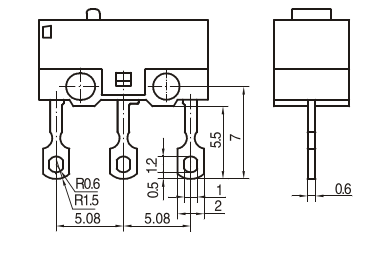
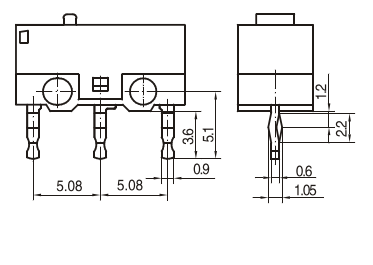
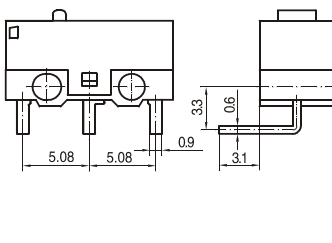
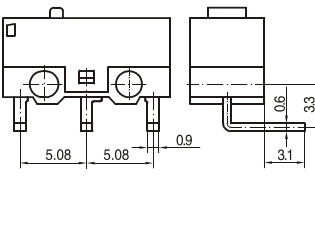
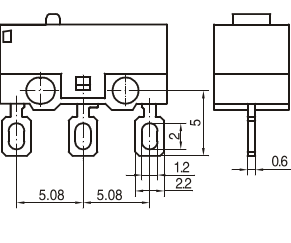
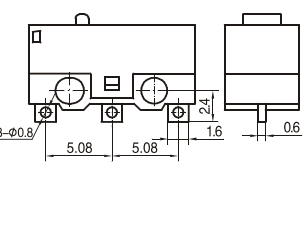
注：指無動臂時按鈕上的動作力。 Note: Refers to the operating force of no lever.

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

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 1 2 3 4 5 6

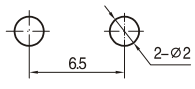
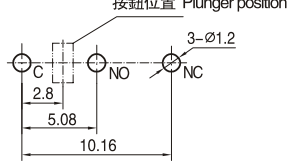
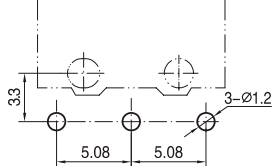
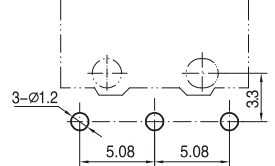
| | | | |
|------------------------------------|---|--|---|
| 1 額定值 Ratings | 無標記: 3(0.5)A250V/3A125VAC No mark C:1(0.5)A250VAC/1A125VAC D:0.5(0.2)A250VAC/0.5A125VAC E:0.3(0.1)A250VAC/0.3A125VAC F:0.1(0.05)A250VAC/0.1A125VAC | 4 端子類型 Terminal types | F: 焊接端子 Solder terminal G: 長焊接端子 Long solder terminal P: PCB端子 PCB terminal L: 左側面PCB端子 Left side PCB terminal R: 右側面PCB端子 Right side PCB terminal S: 自固定PCB端子 Self-clinching PCB terminal Y: 非標準端子 Not standard terminal |
| 2 接觸形式 Circuit | Z-轉換式 SPDT T-常開(接通)式 SPST-NO D-常閉(按斷)式 SPST-NC | 5 動作力(max) Operating force | 045 : 0.45N 075 : 0.75N 150 : 1.5N 250 : 2.5N 注: 若是非標準動作力, 用此動作力上限值表示。 Note: If it is not standard operating force, indicate with the upper limit. |
| 3 驅動形式 Actuator forms | 0: 無動臂 No lever 1: 短動臂 Short lever 2: 長動臂 Long lever 3: 中動臂 Middle lever 5: 滾輪臂 Roller 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, | 6 附加規格編號, 適用於: Additional spec numbers, Apply to: | 1)當開關使用了非標準零件如非標準端子等時; When used not standard parts such as not standard terminal; 2)當顧客有特殊動作特性值或其它要求時。 When customer has particular operating value or other requirements. 附加規格編號用阿拉伯數字表示, 在沒有附加規格編號時, 該位置空缺。 Additional specs number shows by Arabic numerals. If there is no additional numbers, the place is vacant. |

◆ 接線端尺寸 Terminal dimensions

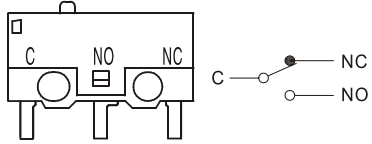
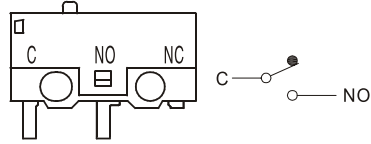
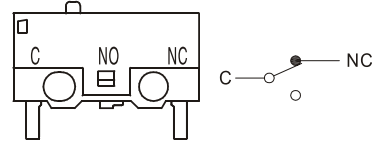
| | | | |
|--|--|--|--|
| P PCB端子 PCB terminal  公共端 Common terminal 常開端 NO terminal 常閉端 NC terminal | G 長焊接端子 Long solder terminal  P0.6 R1.5 | S 自固定PCB端子 Self-clinching PCB terminal  | |
| L 左側面PCB端子 Left side PCB terminal  | R 右側面PCB端子 Right side PCB terminal  | F 焊接端子 Solder terminal  | H 焊接小型端子 Mintype solder terminal  |

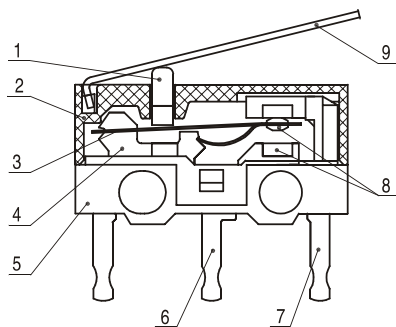
KW10

◆ 安裝孔尺寸 Mounting hole dimensions

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

◆ 接觸形式說明圖 Circuit illustration

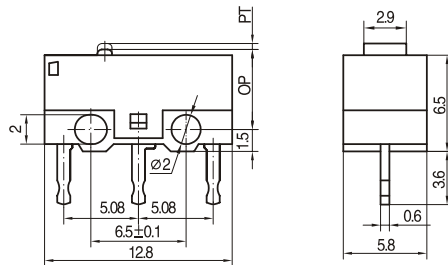
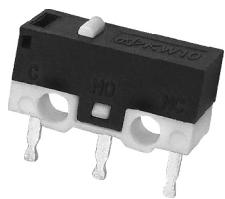
| 轉換式 SPDT | 常開式 SPST-NO | 常閉式 SPST-NC |
|---|---|---|
|  |  |  |

◆ 內部構造圖 Internal configuration drawing


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

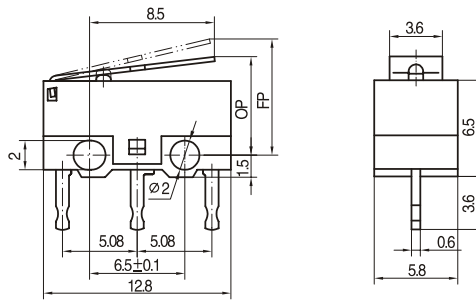
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

KW10-Z0P075
KW10-Z0P150
KW10-Z0P250



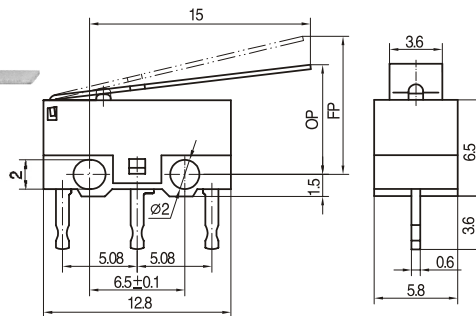
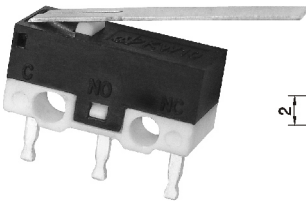
| 型號 Model | KW10-Z0P075 | KW10-Z0P150 | KW10-Z0P250 |
|------------|-------------|-------------|-------------|
| OF Max(N) | 0.75 | 1.50 | 2.50 |
| RF Min(N) | 0.05 | 0.08 | 0.40 |
| PT Max(mm) | 0.5 | | |
| OT Min(mm) | 0.2 | | |
| MD Max(mm) | 0.2 | | |
| OP(mm) | 5.5 ± 0.3 | | |

KW10-Z1P075
KW10-Z1P150
KW10-Z1P250



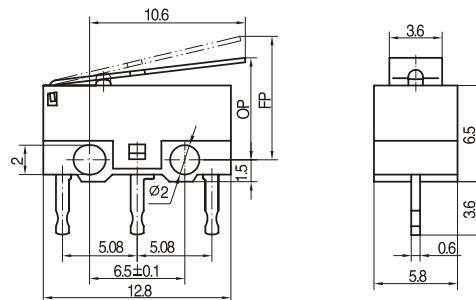
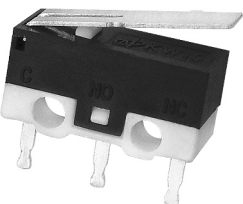
| 型號 Model | KW10-Z1P075 | KW10-Z1P150 | KW10-Z1P250 |
|------------|-------------|-------------|-------------|
| OF Max(N) | 0.26 | 0.53 | 0.90 |
| RF Min(N) | 0.04 | 0.08 | 0.15 |
| OT Min(mm) | 0.6 | | |
| MD Max(mm) | 0.6 | | |
| FP Max(mm) | 9.0 | | |
| OP(mm) | 6.7 ± 1 | | |

KW10-Z2P075
KW10-Z2P150
KW10-Z2P250



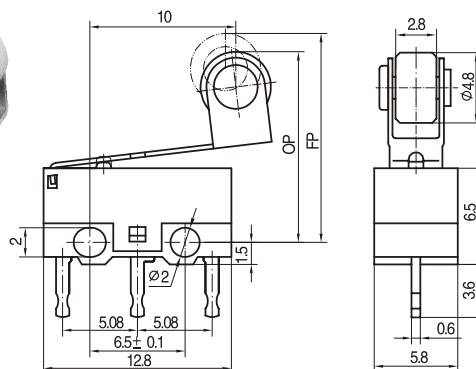
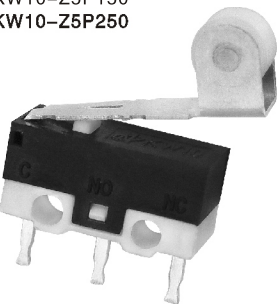
| 型號 Model | KW10-Z2P075 | KW10-Z2P150 | KW10-Z2P250 |
|------------|-------------|-------------|-------------|
| OF Max(N) | 0.17 | 0.33 | 0.55 |
| RF Min(N) | 0.02 | 0.04 | 0.08 |
| OT Min(mm) | 1.0 | | |
| MD Max(mm) | 1.0 | | |
| FP Max(mm) | 10.0 | | |
| OP(mm) | 7.6 ± 1.5 | | |

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 | | |

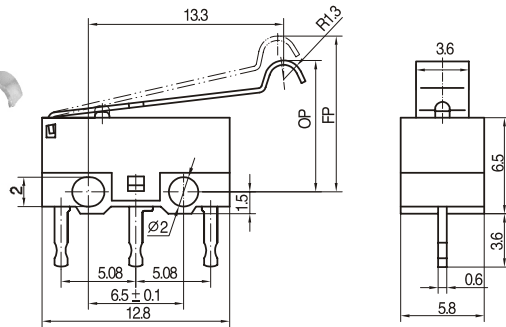
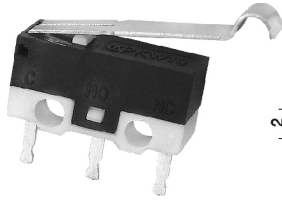
KW10-Z5P075
KW10-Z5P150
KW10-Z5P250



| 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 | | |

KW10

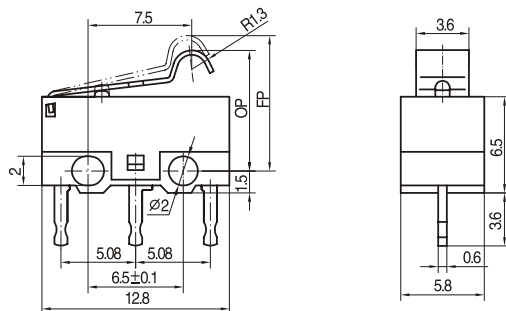
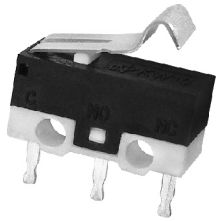
KW10-Z6P075
KW10-Z6P150
KW10-Z6P250



| 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 | | |

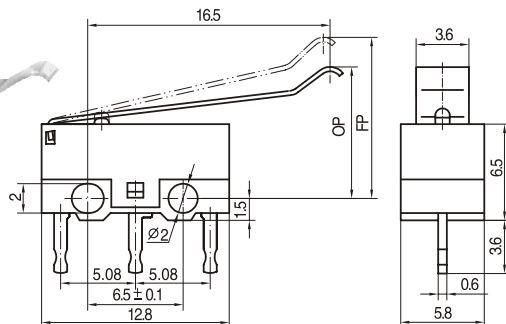
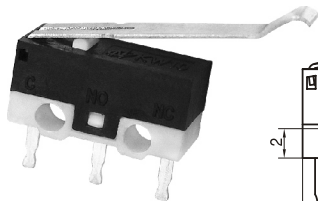
KW10

KW10-Z8P075
KW10-Z8P150
KW10-Z8P250



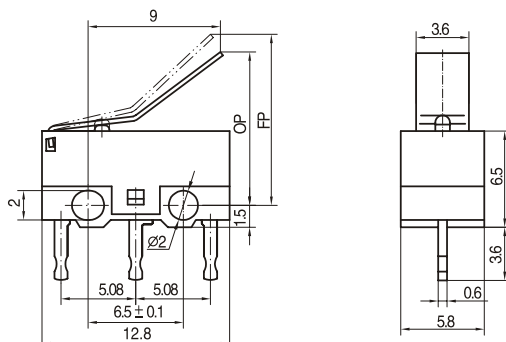
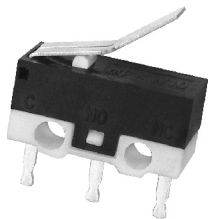
| 型號 Model | KW10-Z8P075 | KW10-Z8P150 | KW10-Z8P250 |
|------------|-------------|-------------|-------------|
| OF Max(N) | 0.30 | 0.60 | 1.00 |
| RF Min(N) | 0.03 | 0.06 | 0.12 |
| OT Min(mm) | 0.6 | | |
| MD Max(mm) | 0.6 | | |
| FP Max(mm) | 10.5 | | |
| OP(mm) | 8.6 ± 1 | | |

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 | | |

◆ **請正確使用** Please use it correctly

【共通注意事項】請參閱相關頁。

【Common points for attention】please refer to related pages

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

(1) 將導線焊接到端子上時，請先將導線穿過端子孔後再進行焊接。

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

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

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

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

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

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

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

■ 關於安裝 Concerning installation

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

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

(2) 安裝時，使用2個M2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 protection circuit according to the needs.

