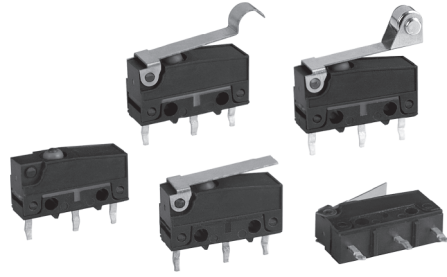


WS4型防水開關系列 Waterproof switch series

◆ 特點和用途 Characteristics and usage

- 超小尺寸 Subminiature size
- 通過橡膠密封圈和環氧樹脂填封達到穩定的密封性。可以在會淋水或多塵埃的地方使用。
To be stably sealed by sealed rubber ring and epoxy resin. Can be used in wet or dusty places.
- 配備焊接端子、PCB端子和帶導綫端子
Provide 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 (不帶導綫型 Without wire)
耐電壓 Test voltage	不相接端子間 Between non-continuous terminals	AC1000V, 50/60Hz, 1min
	端子與不帶電金屬件之間 端子與地(外殼)之間 Between each terminal and other exposed metal parts Between each terminal and ground	AC1500V, 50/60Hz, 1min
	抗振動 Vibration resistance	10 ~ 55Hz, 1.5mm 雙振幅 double amplitude
抗衝擊 Shock resistance		最小 Min.: 294m/s ² (30G) 接觸故障持續時間不超過1ms Contact opening max. 1 msec.
防觸電保護等級 Electric shock proof protection grade		I 級 class
外殼防護等級 Degree protection provided by enclosure		IEC IP50 (端子型 Terminal type) IEC IP67 (導綫型 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

微動開關系列 MICRO SWITCH SERIES
KW3A
KW4A
KW4A(S)
KW10
MS1
MS2
MS3
MS5
MS10

防水開關系列 WATERPROOF SWITCH SERIES
WS1
WS1L
WS2
WS3
WS4
WS5
WS6
WS7

電源開關系列 POWER SWITCH SERIES
KDC-A11
KDC-A04
PS4
PS5
PS6
RS1
RS2
RS3
其他開關系列 OTHER SWITCH SERIES
SP02
KXZ2
PRS1

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

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

1 溫度等級 Degrees of temperature	無標記 No mark: 40T85	6 動作力(max) Operating force	100: 1.0N 160: 1.6N 注: 若是非標準動作力, 用此動作力上限值表示。 Note: if it is not standard operating force, indicate with the upper limit.
2 額定值 Ratings	無標記No mark: 3GPA125V/250VAC 3RA125/250VAC 3(1)A125/250VAC 3A30VDC WS4-A: 5GPA125V/250VAC 5RA125/250VAC 5(2)A125/250VAC 1/4hp 250VAC 4A30VDC WS4-F: 0.1GPA125V/250VAC 0.1RA125/250VAC 0.1(0.05)A125/250VAC 0.1A30VDC	7 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
3 接觸形式 Circuit	Z:轉換式 SPDT T:常開(按通)式 SPST-NO D:常閉(按斷)式 SPST-NC (見說明圖 See illustration)	8 導線長度 Wire length	用毫米數表示 Indicate with number- "mm"
4 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 <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 Note: <input type="checkbox"/> Indicate not standard lever.	9 防護等級 Degree 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
5 端子類型 Terminal type	T:110快接端子 110 quick-connect H:焊接端子 Solder terminal P:PCB端子 PCB terminal S: PCB端子之二 PCB 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	10 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

微動開關系列
MICRO SWITCH SERIES

KW3A

KW4A

KW4A(S)

KW10

MS1

MS2

MS3

MS5

MS10

防水開關系列
WATERPROOF SWITCH SERIES

WS1

WS1L

WS2

WS3

WS4

WS5

WS6

WS7

電源開關系列
POWER SWITCH SERIES

KDC-A11

KDC-A04

PS4

PS5

PS6

RS1

RS2

RS3

其他開關系列
OTHER SWITCH SERIES

SP02

KXZ2

PRS1

微動開關系列
MICRO SWITCH SERIES

- KW3A
- KW4A
- KW4A(S)
- KW10
- MS1
- MS2
- MS3
- MS5
- MS10

防水開關系列
WATERPROOF SWITCH SERIES

- WS1
- WS1L
- WS2
- WS3
- WS4
- WS5
- WS6
- WS7

電源開關系列
POWER SWITCH SERIES

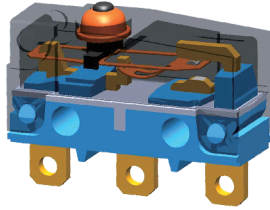
- KDC-A11
- KDC-A04
- PS4
- PS5
- PS6

其他開關系列
OTHER SWITCH SERIES

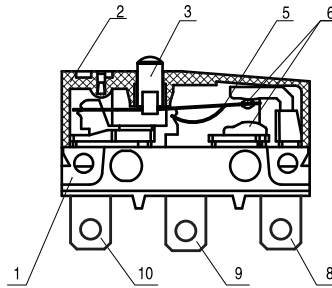
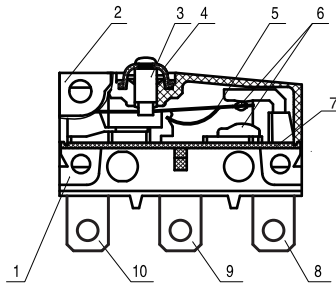
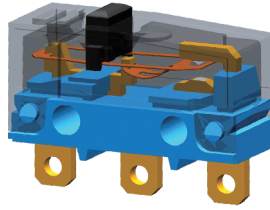
- SP02
- KXZ2
- PRS1

◆ 內部構造圖 Internal configuration drawing

IP67

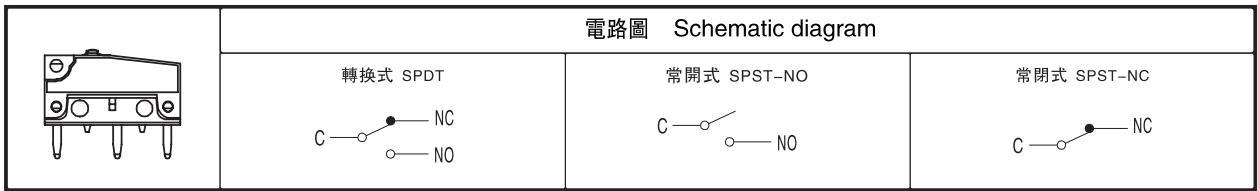


IP40



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

◆ 接觸形式說明圖 Circuit illustration

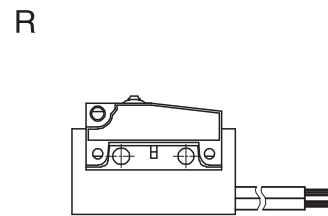
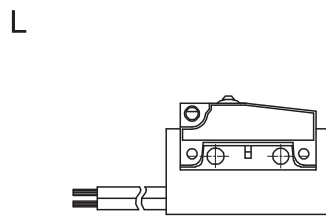
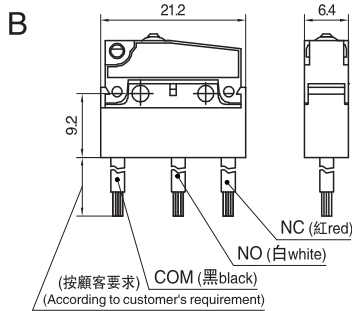


◆ 導線型外形圖 Outline drawing of wire type

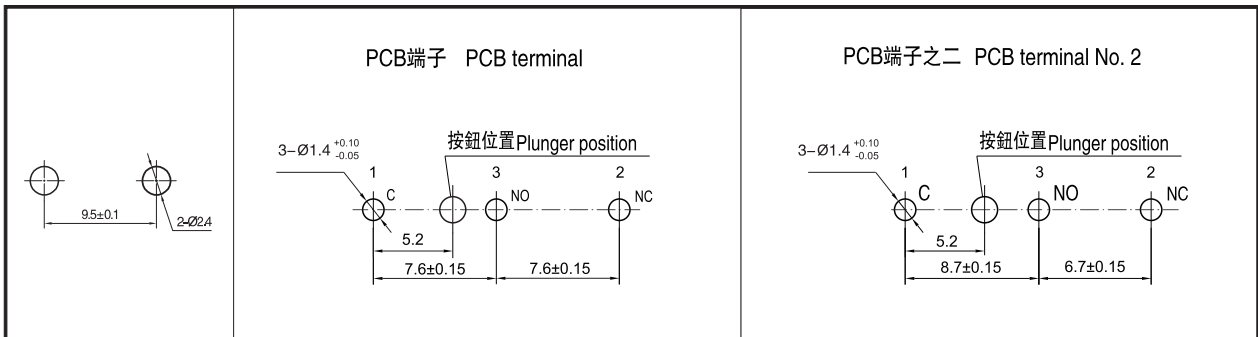
底部導線型 Bottom wire type

左面導線型 Left side wire type

右面導線型 Right side wire type



◆ 安裝孔尺寸 Mounting hole dimensions

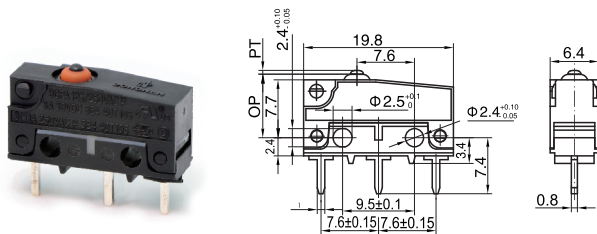


◆ 接綫端尺寸 Terminal dimensions

<p>PCB端子 PCB terminal</p> <p>公共端 Common terminal</p> <p>常開端 NO terminal</p> <p>常閉端 NC terminal</p>	<p>焊接端子 Solder terminal</p>	<p>快接端子 #110 Quick connect terminal #110</p>
<p>PCB端子之二 PCB terminal No. 2</p>	<p>左側面PCB端子 Left side PCB terminal</p>	<p>右側面PCB端子 Right side PCB terminal</p>

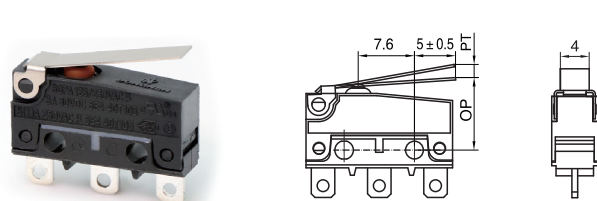
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

WS4-□Z0-P100
WS4-□Z0-P160



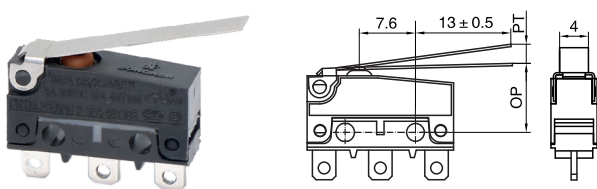
型號 Model	WS4-□Z0-P100	WS4-□Z0-P160
OF Max(N)	1.00	1.60
RF Min(N)	0.20	0.30
PT Max(mm)	0.6	
OT Min(mm)	0.4	
MD Max(mm)	0.1	
OP(mm)	8.4 ± 0.3	

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	

微動開關系列
MICRO SWITCH SERIES

KW3A

KW4A

KW4A(S)

KW10

MS1

MS2

MS3

MS5

MS10

防水開關系列
WATERPROOF SWITCH SERIES

WS1

WS1L

WS2

WS3

WS4

WS5

WS6

WS7

電源開關系列
POWER SWITCH SERIES

KDC-A11

KDC-A04

PS4

PS5

PS6

RS1

RS2

RS3

其他開關系列
OTHER SWITCH SERIES

SP02

KXZ2

PRS1

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

微動開關系列
MICRO SWITCH SERIES

KW3A

KW4A

KW4A(S)

KW10

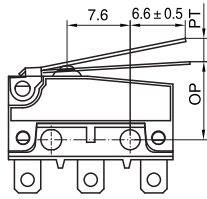
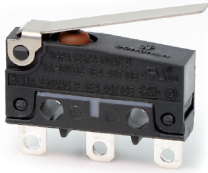
MS1

MS2

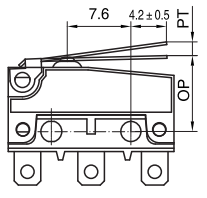
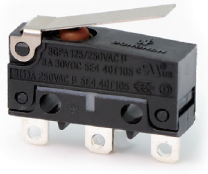
MS3

MS5

MS10

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	

防水開關系列
WATERPROOF SWITCH SERIES

WS1

WS1L

WS2

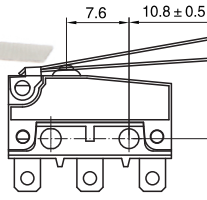
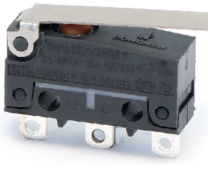
WS3

WS4

WS5

WS6

WS7

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	

電源開關系列
POWER SWITCH SERIES

KDC-A11

KDC-A04

PS4

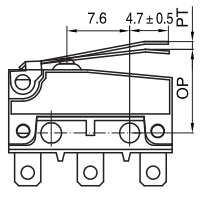
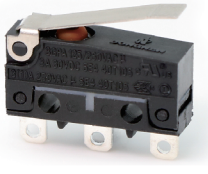
PS5

PS6

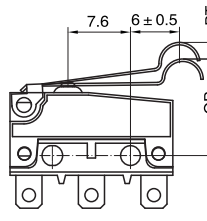
RS1

RS2

RS3

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	

其他開關系列
OTHER SWITCH SERIES

SP02

KXZ2

PRS1