

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 a variety of wires.

- 配備各種形式動臂

A variety of levers.

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

Can be used in environmental resistant requirements application, outdoor equipments such as automobile, vending machine, refrigerator, ice machine, bath equipment, water heater and air-conditioner etc.



◆ 技術特性 Technical Characteristics

項目 Item		特性值 Value
工作速度 Operating speed		0.1mm ~ 1m/s (無動臂時 No lever)
工作頻率 Operating frequency		機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; Electrical 25 cycles/min
絕緣電阻 Insulation resistance		$\geq 100\text{M}\Omega$ (500VDC)
接觸電阻 Contact resistance		端子型 Terminal type $\leq 50\text{m}\Omega$ 導線型 Wire type $\leq 100\text{m}\Omega$
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
抗衝擊 Shock resistance		耐久: 1000m/S^2 (約100G) 最大 Endurance: 1000m/S^2 (approx 100G) max 誤動作: 300m/S^2 (約30G) 最大 Wrong action: 300m/S^2 (approx. 30G) max
防觸電保護等級 Electric shock proof protection degree		I 級 class
外殼防護等級 Case protection degree		IEC IP67 (端子型的端子部位除外 Except terminal part of terminal type)
壽命 Life		機械 $\geq 1,000,000$ 次; Mechanical $\geq 1,000,000$ cycles 電氣 $\geq 50,000$ 次; Electrical $\geq 50,000$ cycles
安全認證 Safety approvals		UL、CUL、ENEC、DEMKO

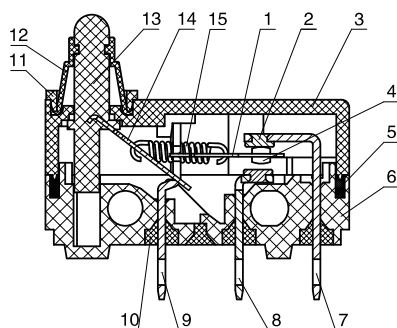
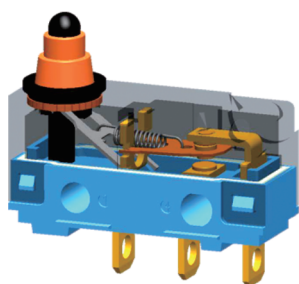
To provide a safe and reliable on-off service let electric appliances more perfect

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

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

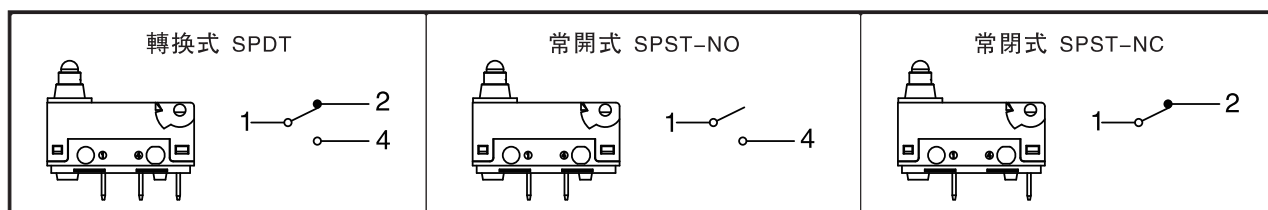
1 溫度等級 Degrees of temperature	無標記 No mark: 20T85 T:40T85	6 動作力(max) Operating force	050: 0.5N 100: 1N 150: 1.5N 200: 2N 300: 3N 注: 若是非標準動作力, 用此動作力上限值表示。 Note: If it is not standard operating force, indicate with the upper limit.
2 額定值 Ratings	無標記 No mark: 5A125VAC 5GPA125/250VAC 5(2)A125/250VAC 4A30VDC 1/4hp250VAC WS1L-B: 3A125VAC 3GPA125/250VAC 3(1)A125/250VAC WS1L-C: 1A125VAC 1GPA125/250VAC 1(0.3)A125/250VAC WS1L-F: 0.1A125/250VAC 0.1GPA125/250VAC	7 按鈕規格 Plunger specs	無標記 No mark: 標準按鈕 Standard plunger □:非標準按鈕 Not standard plunger 注: □表示非標準按鈕的代號 Note:□Indicate not standard plunger
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)
4 驅動形式 Actuator forms	0:無動臂 No lever 1:短動臂 Short lever 2:長動臂 Long lever 3:中動臂 Middle lever 4:短滾輪臂 Short Roller lever 5:長滾輪臂 Long Roller lever 6:弧形動臂 Arc Lever □:標準動臂 Not standard lever 注: □表示非標準動臂的代號 Note: □indicate not standard lever	9 防護等級 Protection degree	無標記 No mark: IP67 IP□□:其它等級 Other degrees
5 端子類型 Terminal types	F:焊接端子 Solder terminal P:PCB端子 PCB terminal L:左側面PCB端子 Left side PCB terminal R:右側面PCB端子 Right side PCB terminal T:110快接端子 110 quick-connect Y:非標準端子 Not standard terminal W:導線型 Wire type	10 附加規格代號及 導線顏色配置代號 Additional 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

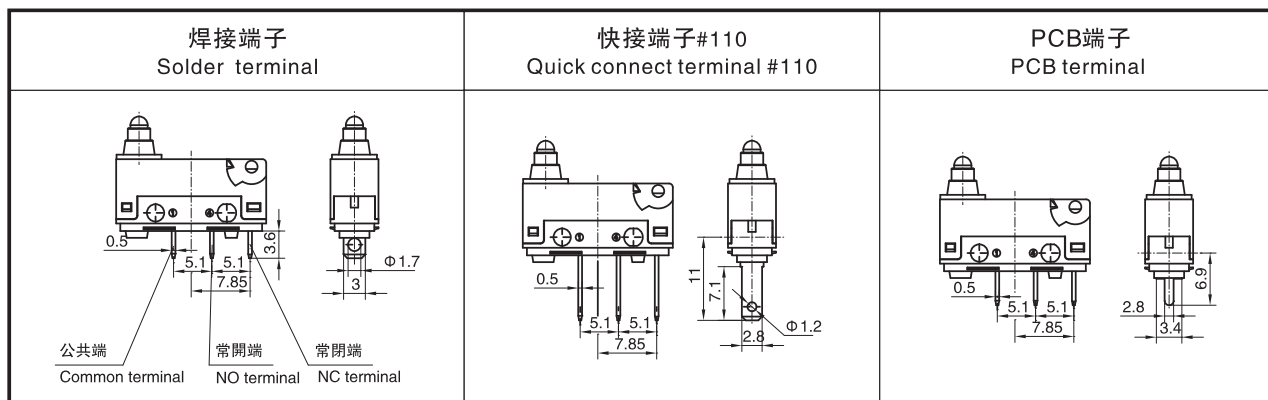


- | | |
|----------|---------------|
| 1: 可動片 | Moving piece |
| 2: 電觸點 | Contact |
| 3: 蓋 | Cover |
| 4: 電觸點 | Contact |
| 5: 橡膠 | Rubber |
| 6: 基座 | Case |
| 7: 常閉端子 | NC terminal |
| 8: 常開端子 | NO terminal |
| 9: 支架 | Support |
| 10: 環氧樹脂 | Epoxide resin |
| 11: 壓環 | Clasp ring |
| 12: 密封圈 | Hermetic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

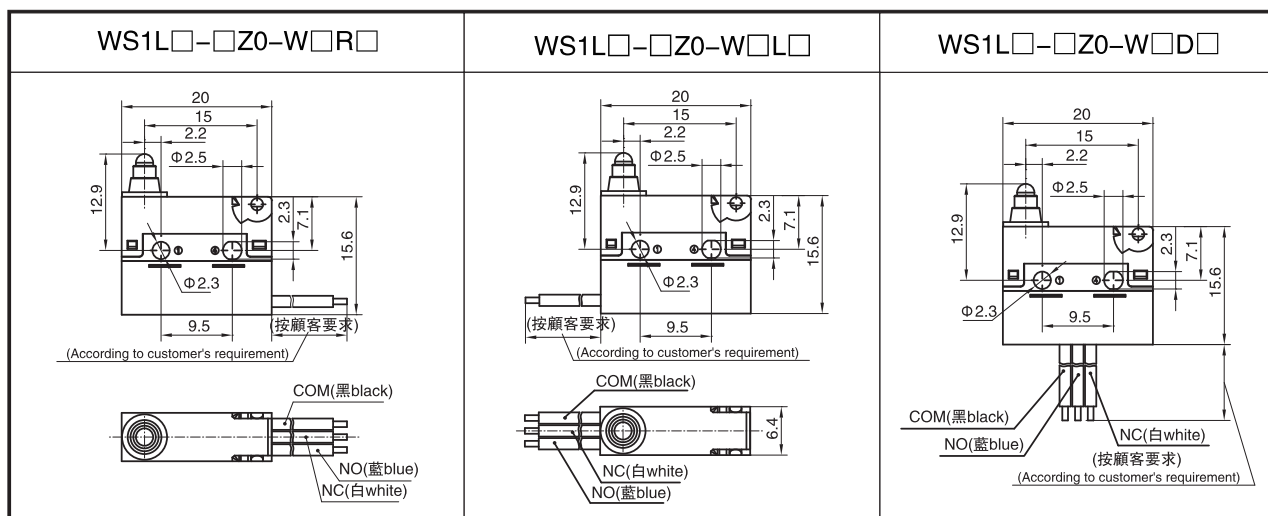
◆ 接觸形式說明圖 Circuit illustration

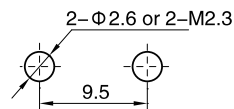


◆ 接線端尺寸 Terminal dimensions

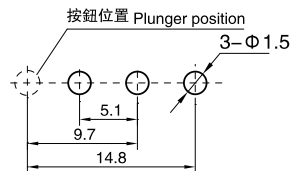


◆ 導線型外形圖 Outline drawing of wire type



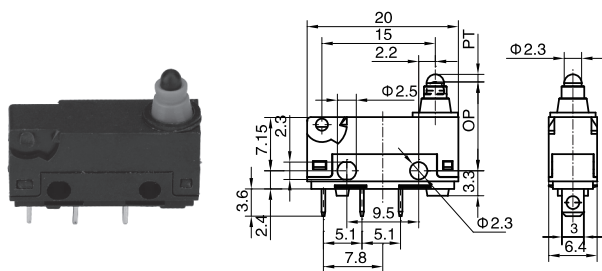


PCB端子 PCB terminal



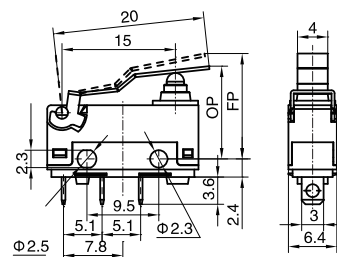
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

WS1L-□Z0-F150
WS1L-□Z0-F200



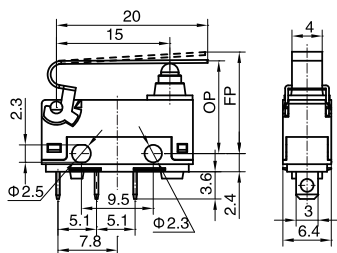
型號 Model	WS1L-□Z0-F150	WS1L-□Z0-F200
OF Max(N)	1.50	2.00
RF Min(N)	0.30	0.40
PT Max(mm)	1.6	
OT Min(mm)	1.8	
MD Max(mm)	1.9	
OP (mm)	11.7 ± 0.4	

WS1L-□ZE-F150
WS1L-□ZE-F200



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

WS1L-□ZF-F150
WS1L-□ZF-F200



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