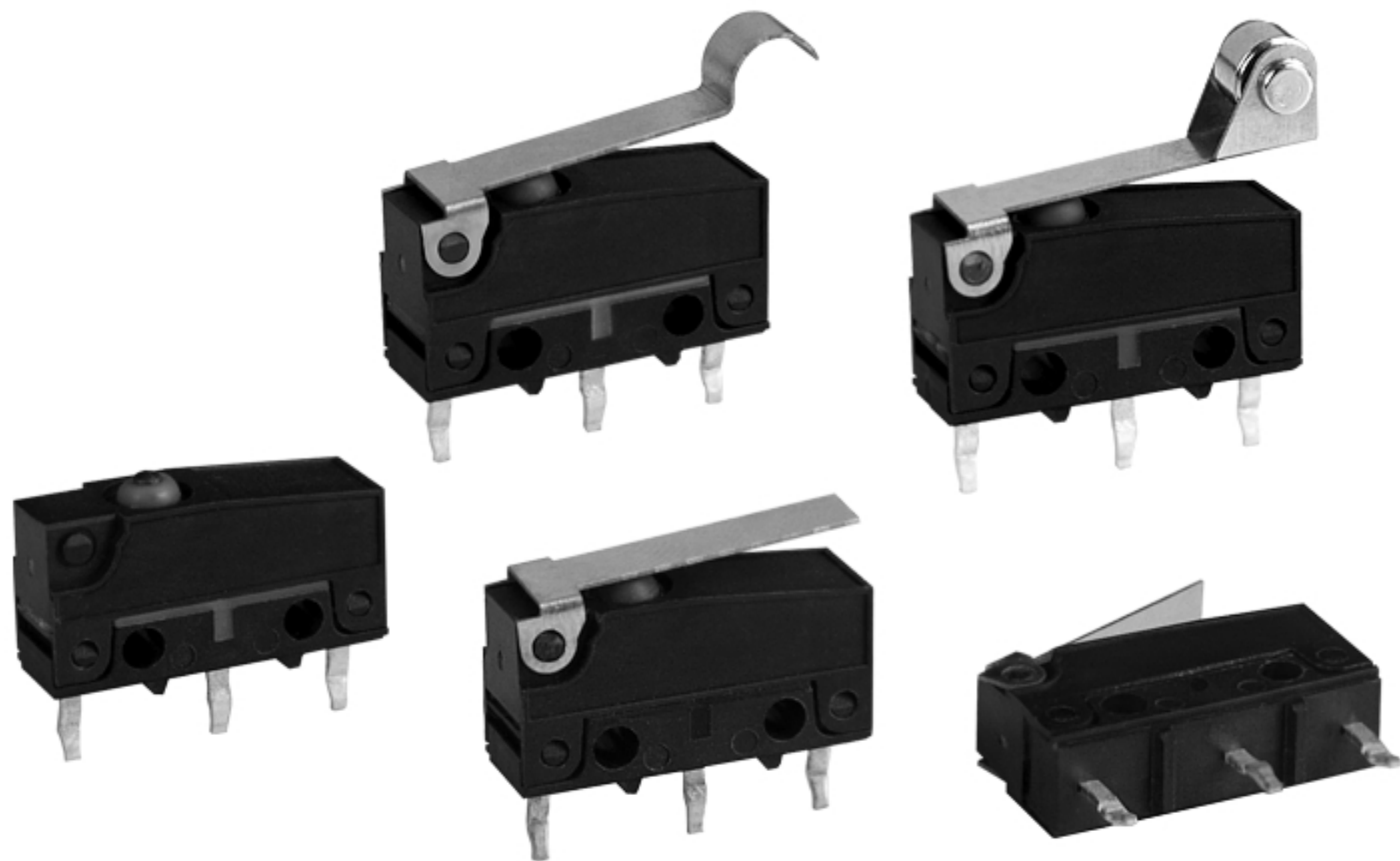


WS4型防水開關系列 Waterproof switch series

◆ 特點和用途 Characteristics and usage

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



◆ 技術特性 Technical Characteristics

項目 Item		特性值 Value
工作速度 Operating speed		1mm ~ 500mm/s (無動臂時 No lever)
工作頻率 Operating frequency		機械 60次/min; 電氣 25次/min Mechanical 60 cycles/min; electrical 25 cycles/min
絕緣電阻 Insulation resistance		≥100M Ω (500VDC)
接觸電阻 Contact resistance		≤50m Ω (不帶導綫型 Without wire)
耐電壓 Test voltage	不相接端子間 Between non-continuous terminals	AC1000V,50/60Hz, 1min
	端子與不帶電金屬件之間 端子與地(外殼)之間 Between each terminal and other exposed metal parts Between each terminal and ground	AC1500V, 50/60Hz, 1min
抗振動 Vibration resistance		10 ~ 55Hz, 1.5mm 雙振幅 Double amplitude
抗衝擊 Shock resistance		最小 Min.: 294m/s²(30G) 接觸故障持續時間不超過1ms Contact opening max. 1 msec.
防觸電保護等級 Electric shock proof protection degree		I 級 class
外殼防護等級 Case protection degree		IEC IP50 (端子型 Terminal type) IEC IP67 (導綫型 Wire type)
壽命 Life		機械 ≥500,000次 Mechanical ≥500,000 cycles 電氣 ≥50,000次 Electrical ≥50,000 cycles
安全認證 Safety approvals		UL、CUL、ENEC、DEMKO

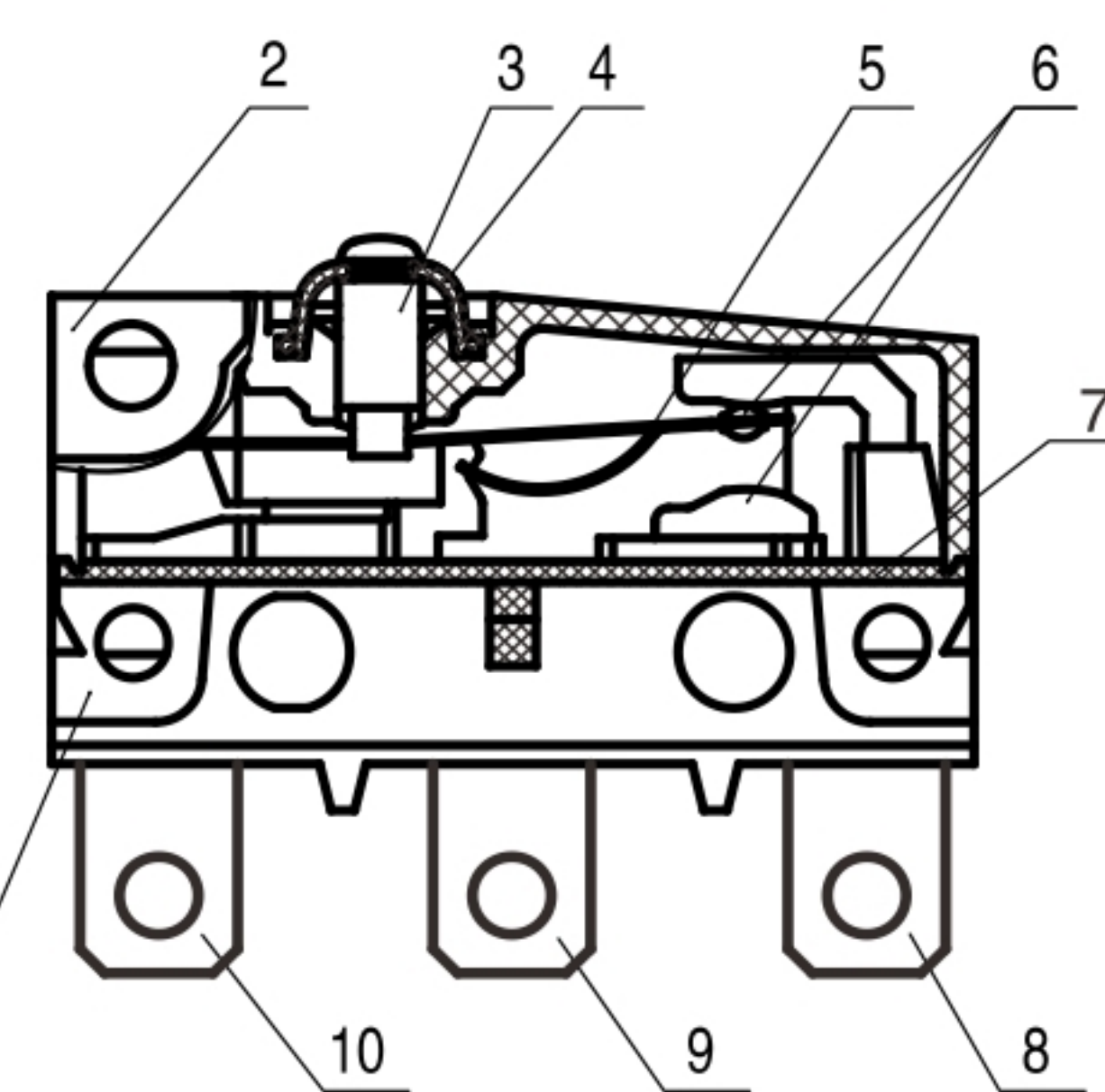
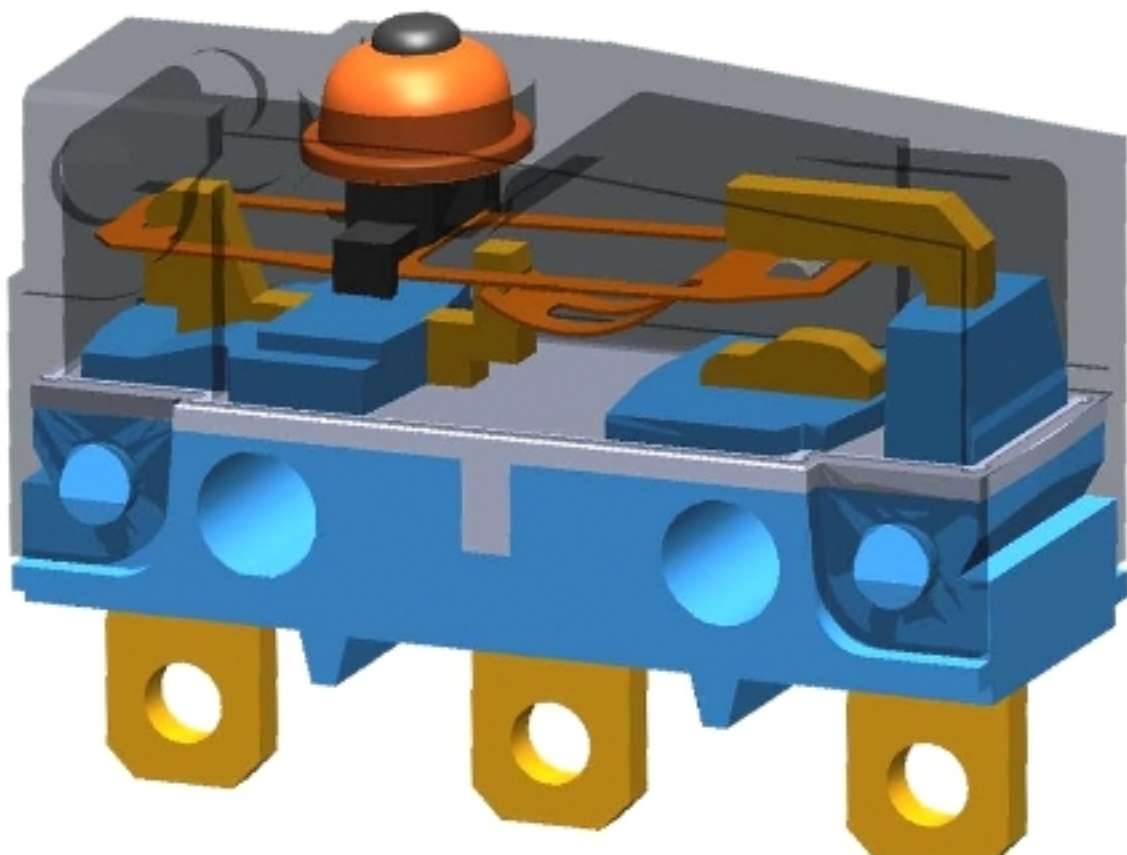
◆ 型號規格命名及含義 Model number legend and meanings

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

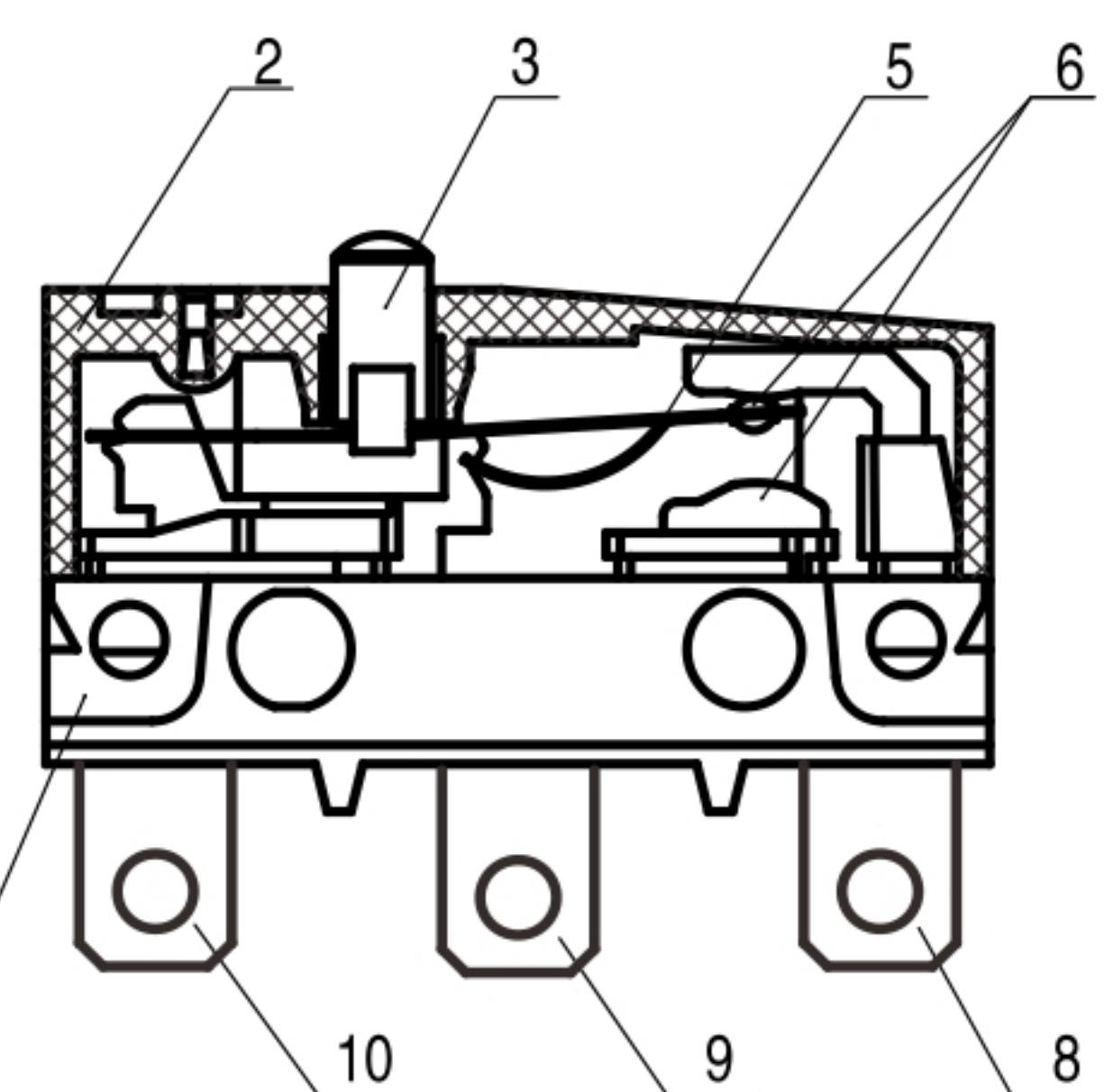
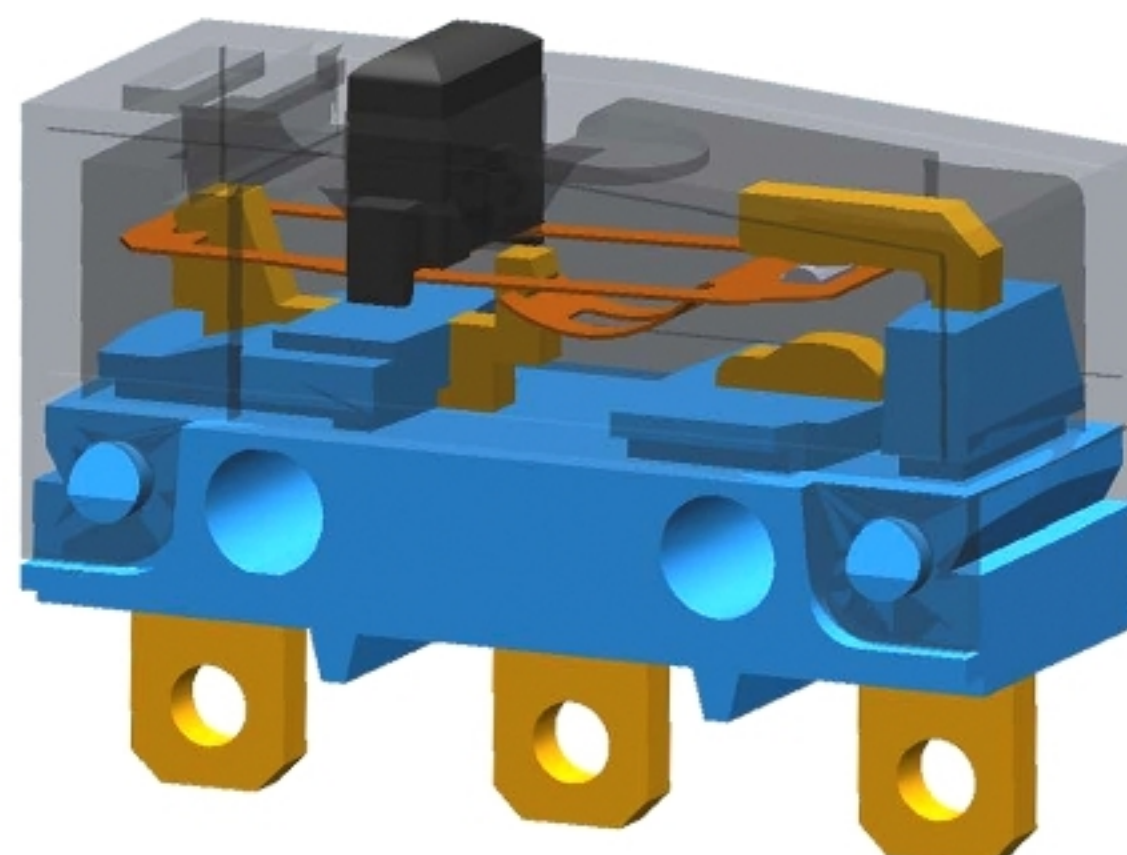
1 溫度等級 Degrees of temperature	無標記 No mark: 40T85	6 動作力(max) Operating force	100: 1.0N 160: 1.6N 注: 若是非標準動作力, 用此動作力上限值表示。 Note: if it is not standard operating force, indicate with the upper limit.
2 額定值 Ratings	無標記No mark: 3GPA125V/250VAC 3RA125/250VAC 3(1)A125/250VAC 3A30VDC WS4-A: 5GPA125V/250VAC 5RA125/250VAC 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 導綫型出綫方向 Wire type wire direction	B:底部導綫型 Bottom wire type L:左面導綫型 Left side wire type R:右面導綫型 Right side wire type
		8 導綫長度 Wire length	用毫米數表示 Indicate with number- “mm”
		9 防護等級 Protection degree	無標記 No mark: IP50 (端子型 Terminal type) IP67 (導綫型 Wire type) IP□□: 其它等級 Other degrees
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)	10 附加規格代號及 導綫顏色配置代號 Additional specs code and wire color code	適用於 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) 當導綫顏色不是默認的配置顏色時。 When the wire color is not the default color. ■ 附加規格代號用兩位阿拉伯數字表示, 如 01、02、03……在沒有附加規格編號時, 該位置空缺。 Additional spec number shows as 01, 02, 03…… If there is no additional numbers, the place is vacant. ■ 導綫顏色配置代號: 用三個英文字母按 COM、NC、NO順序表示; 若是常開式或常閉式開關, 空缺位置用字母O表示。(顏色代號: 紅-R、白-W、黑-B、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綫顏色配置代號, 則導綫顏色配置代號位于附加規格代號之後。 If there are append specs code and wire color code at the same time, then the wire color code should be after the append specs code. 示例 example: 02BWR
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 lever 6: 弧形動臂 Arc lever 8: 葉片形動臂 Leaf lever L: 長行程式驅動 Long stroke type □: 非標準動臂 Not standard lever 注: □表示非標準動臂的代號 Note: □ Indicate not standard lever.		
5 端子類型 Terminal type	T:110快接端子 110 quick-connect H:焊接端子 Solder terminal P:PCB端子 PCB terminal S: PCB端子之二 PCB terminall No. 2 L:左側面端子 Left side terminal R:右側面端子 Right side terminal W:導綫型 Wire type		

◆ 内部構造圖 Internal configuration drawing

IP67

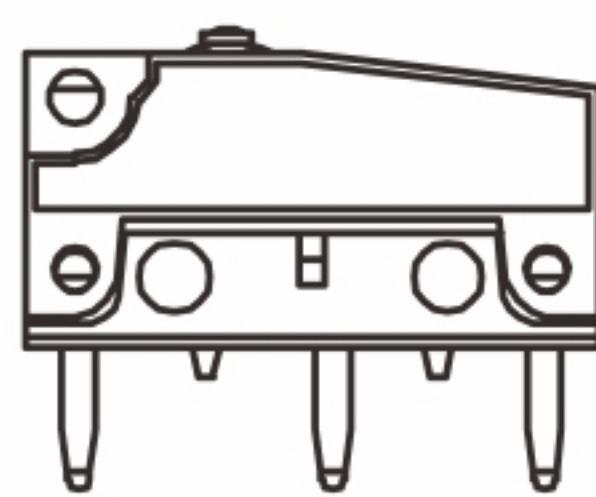
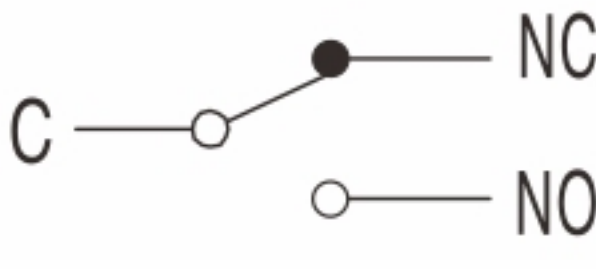
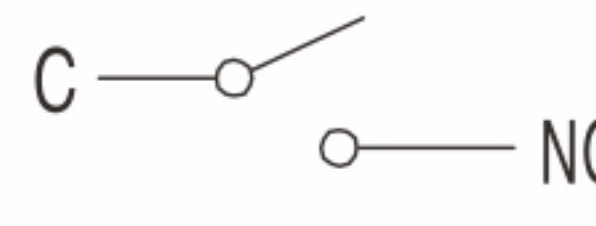
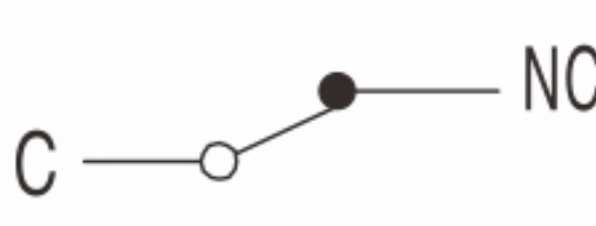


IP40

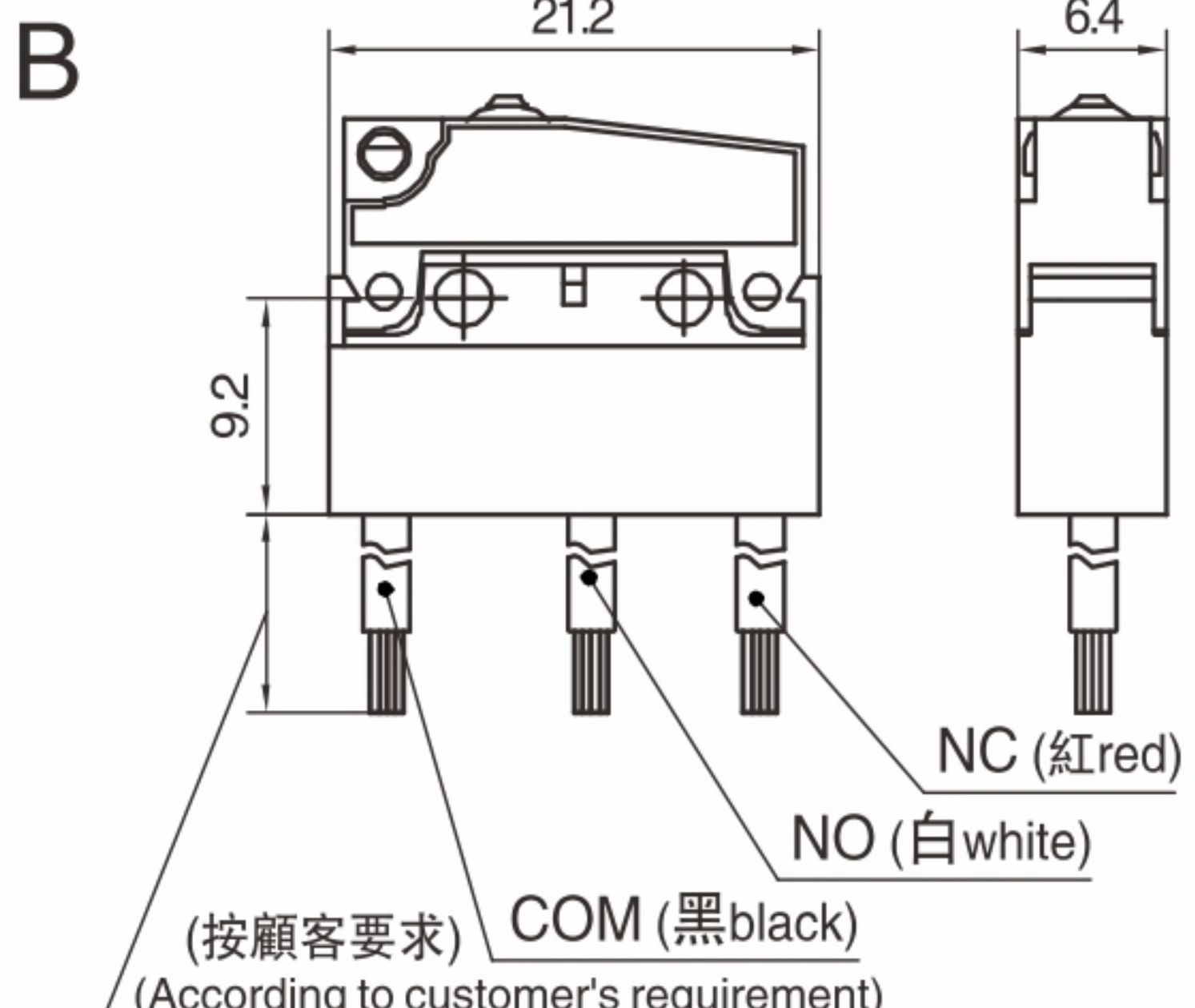
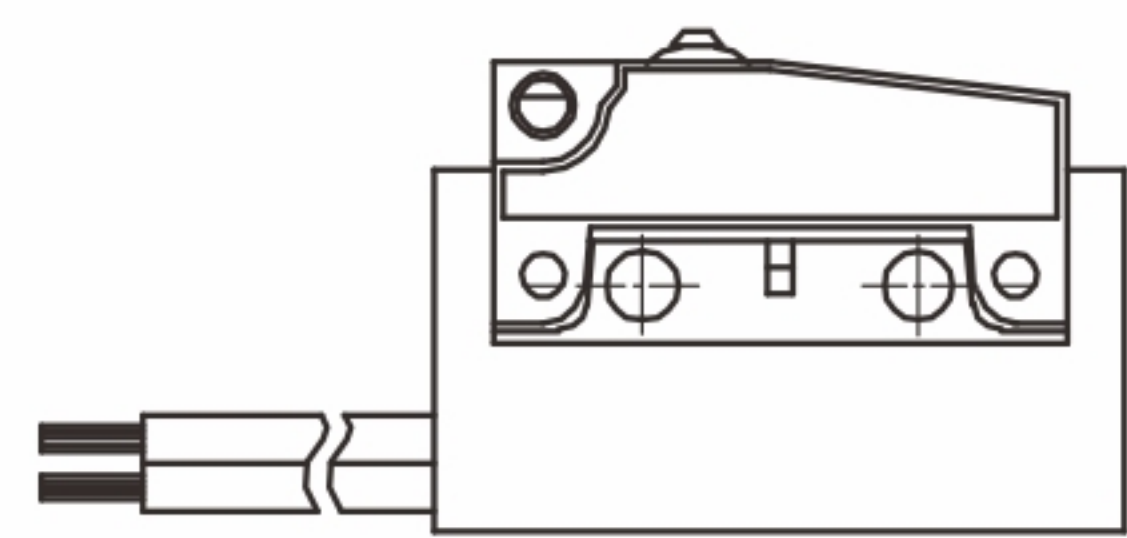
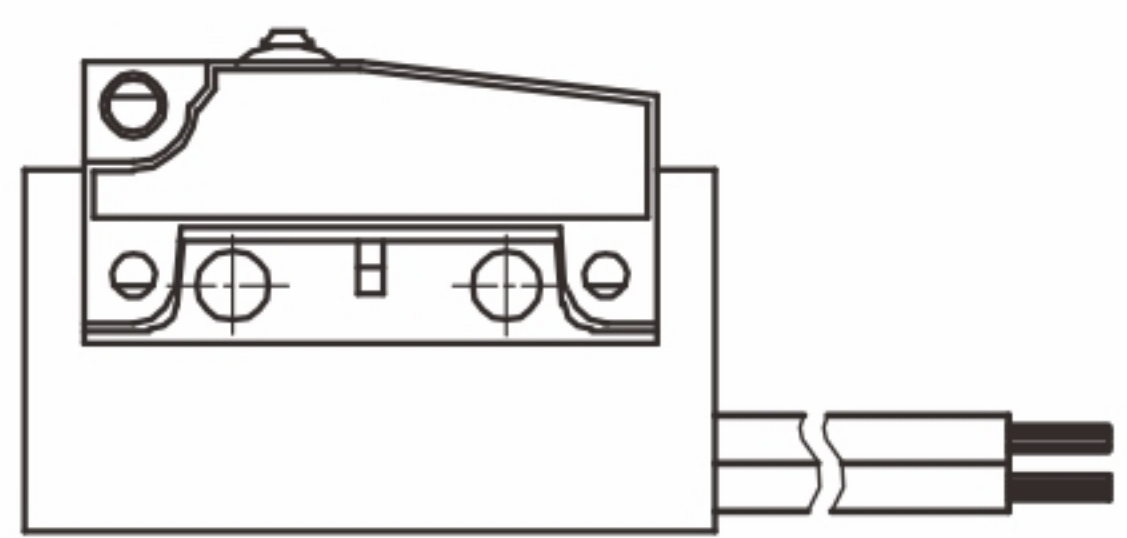


1 基座 Case
2 蓋 Cover
3 按鈕 Plunger
4 密封圈 Hermetic loop
5 可動片 Moving piece
6 電觸點 Contact
7 密封條 Sealing strip
8 常閉端子 NC terminal
9 常開端子 NO terminal
10 支架 Support

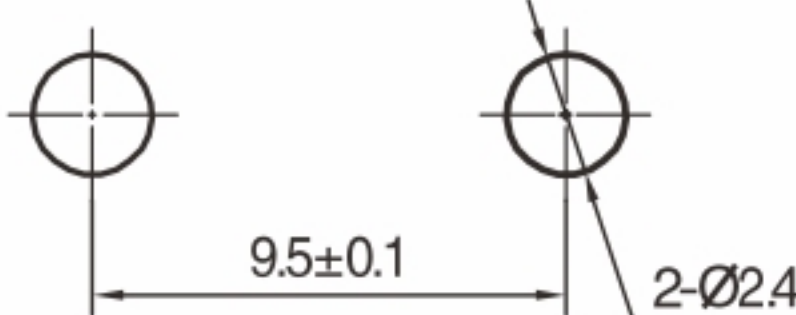
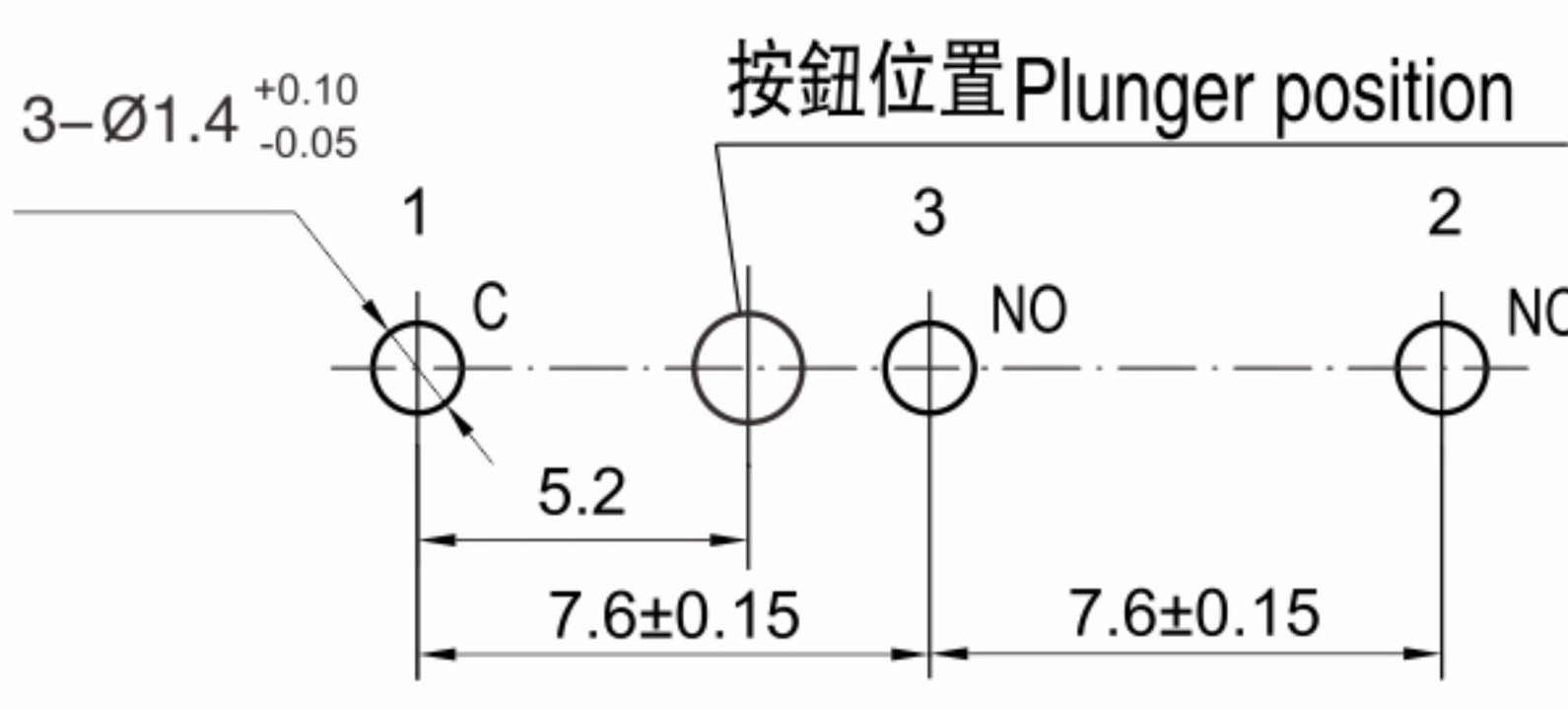
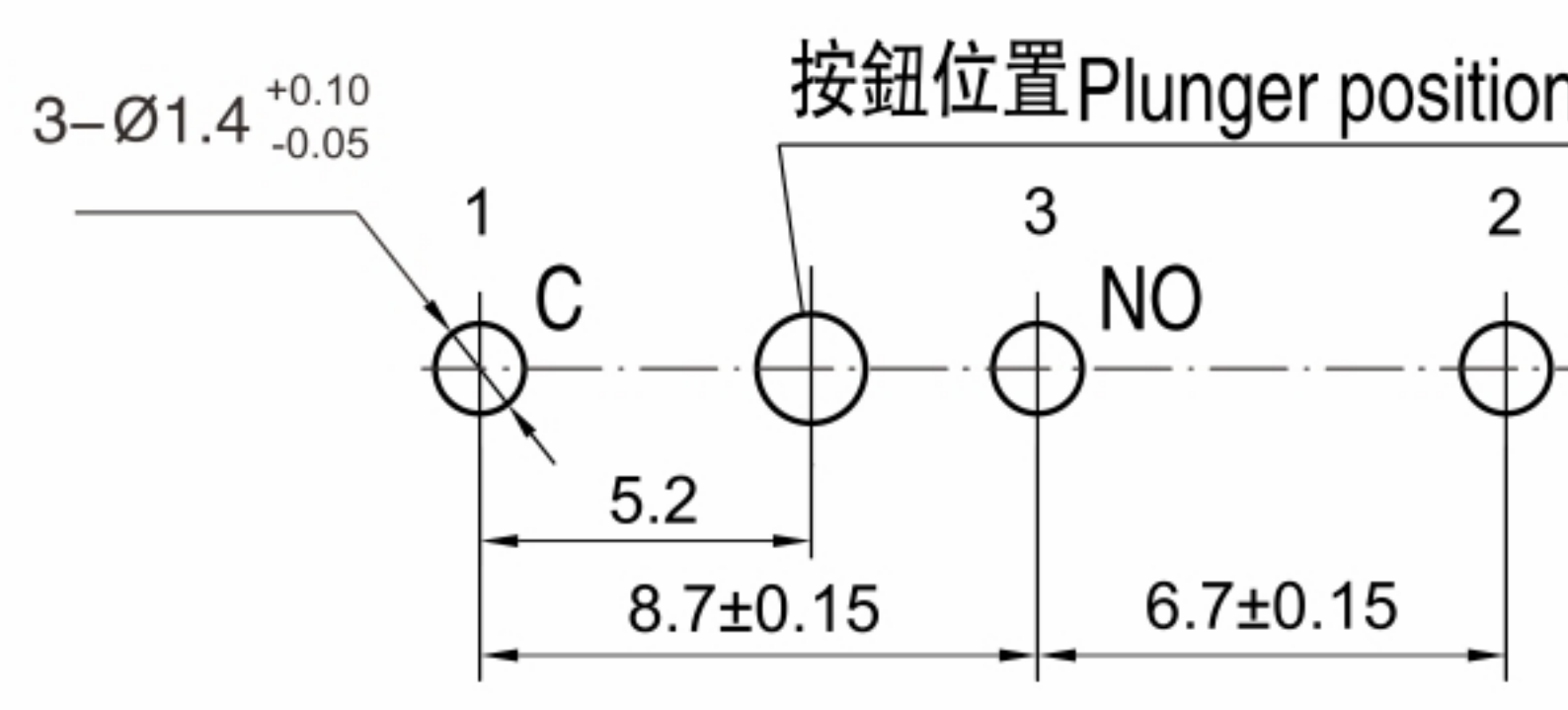
◆ 接觸形式說明圖 Circuit illustration

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

◆ 導綫型外形圖 Outline drawing of wire type

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

◆ 安裝孔尺寸 Mounting hole dimensions

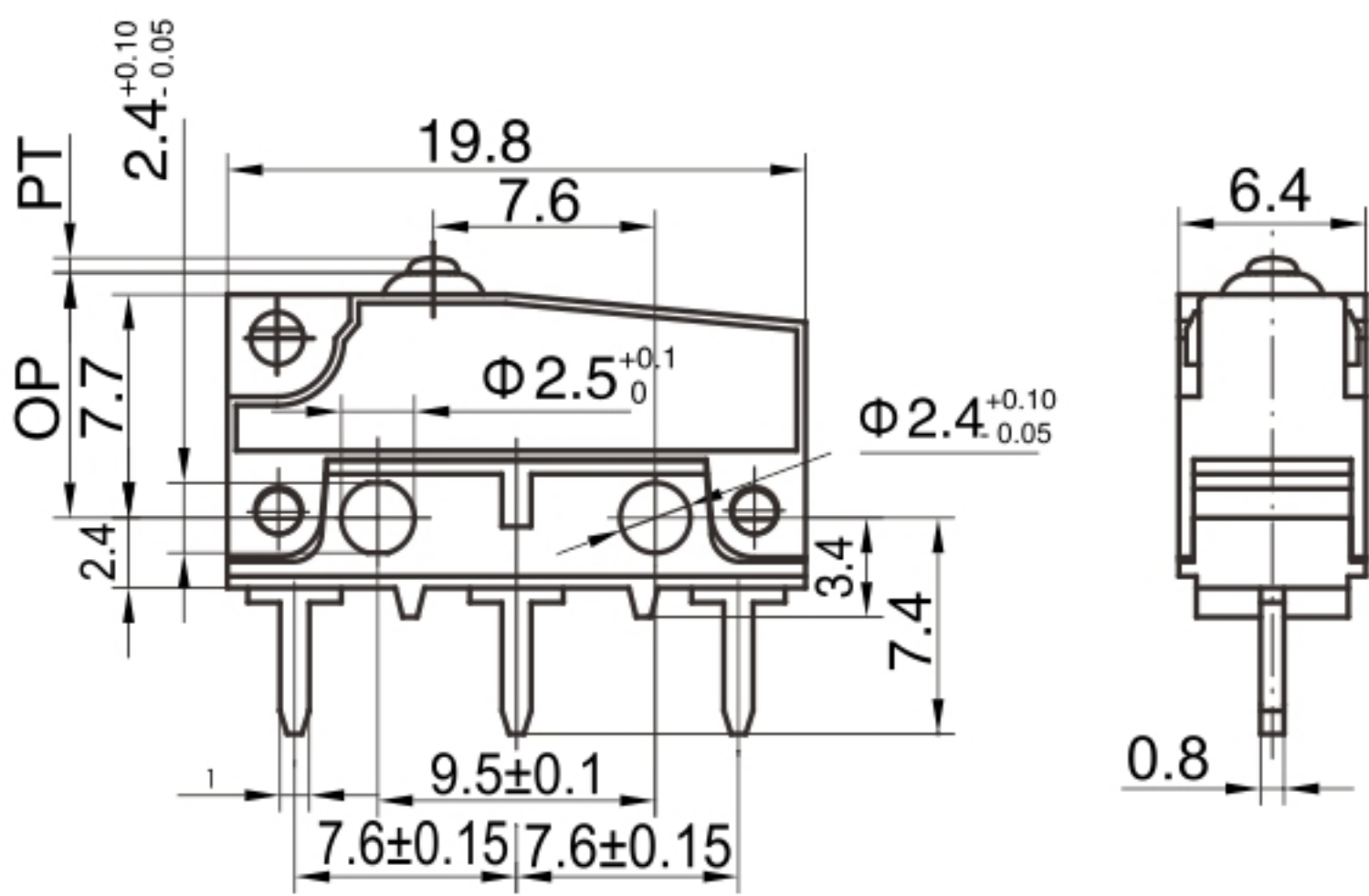
	PCB端子 PCB terminal	PCB端子之二 PCB terminal No. 2
		

◆ 接線端尺寸 Terminal dimensions

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

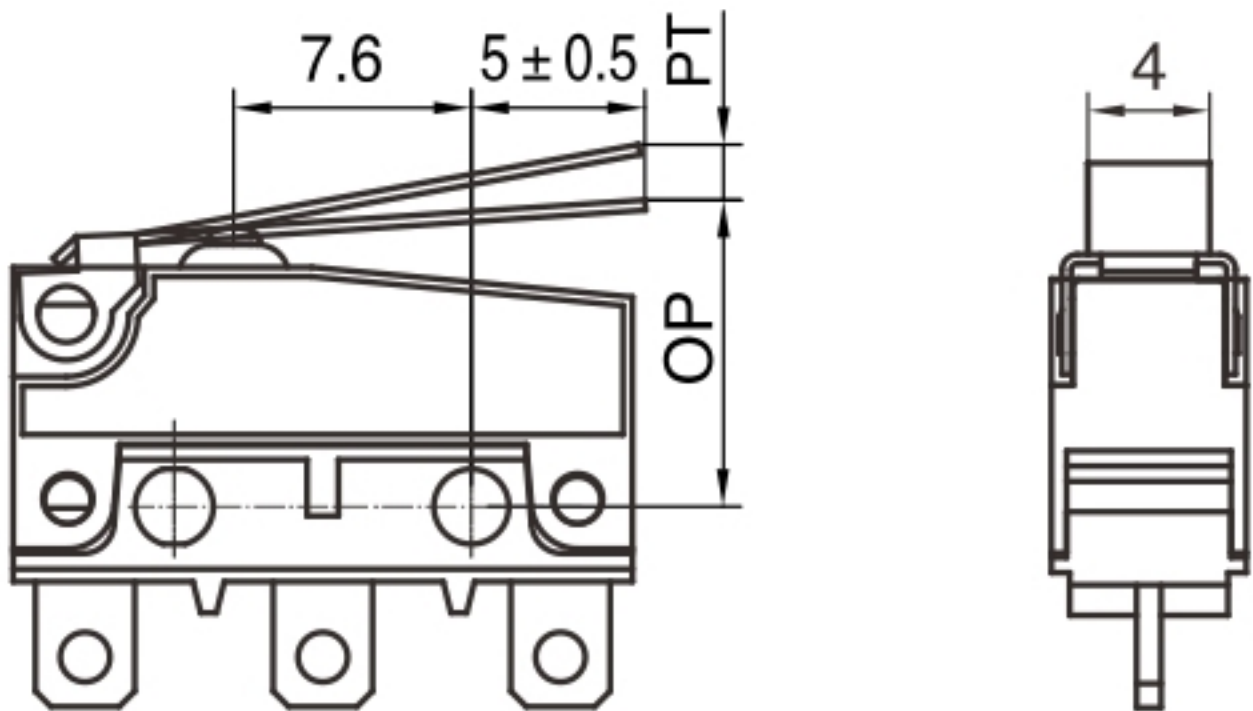
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

WS4-□Z0-P100
WS4-□Z0-P160



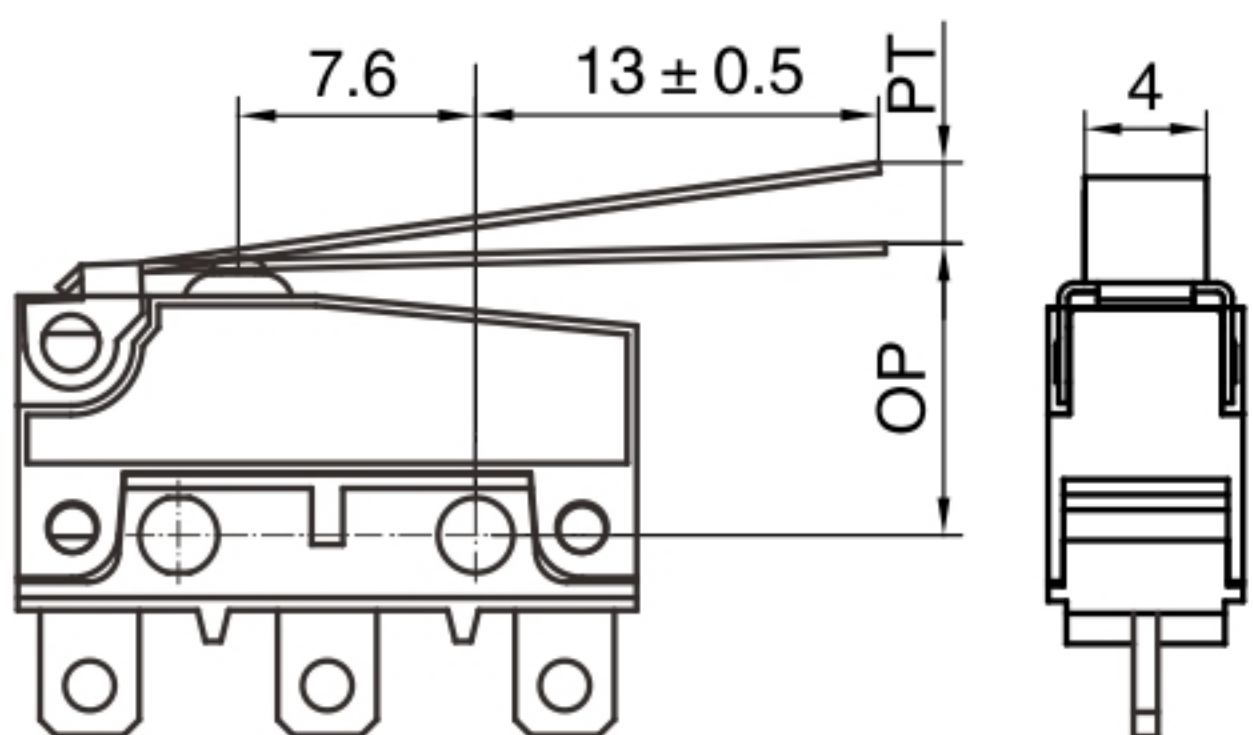
型號 Model	WS4-□Z0-P100	WS4-□Z0-P160
OF Max(N)	1.00	1.60
RF Min(N)	0.20	0.30
PT Max(mm)	0.6	
OT Min(mm)	0.4	
MD Max(mm)	0.1	
OP(mm)	8.4 ± 0.3	

WS4-□Z1-H100
WS4-□Z1-H160



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

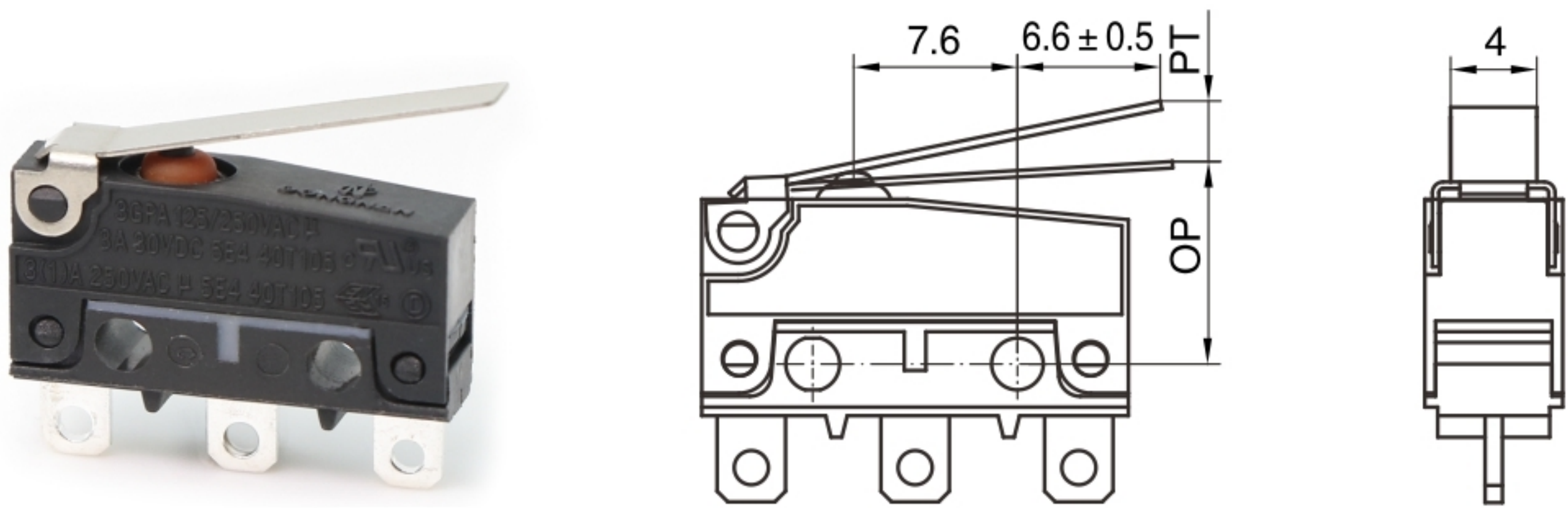
WS4-□Z2-H100
WS4-□Z2-H160



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

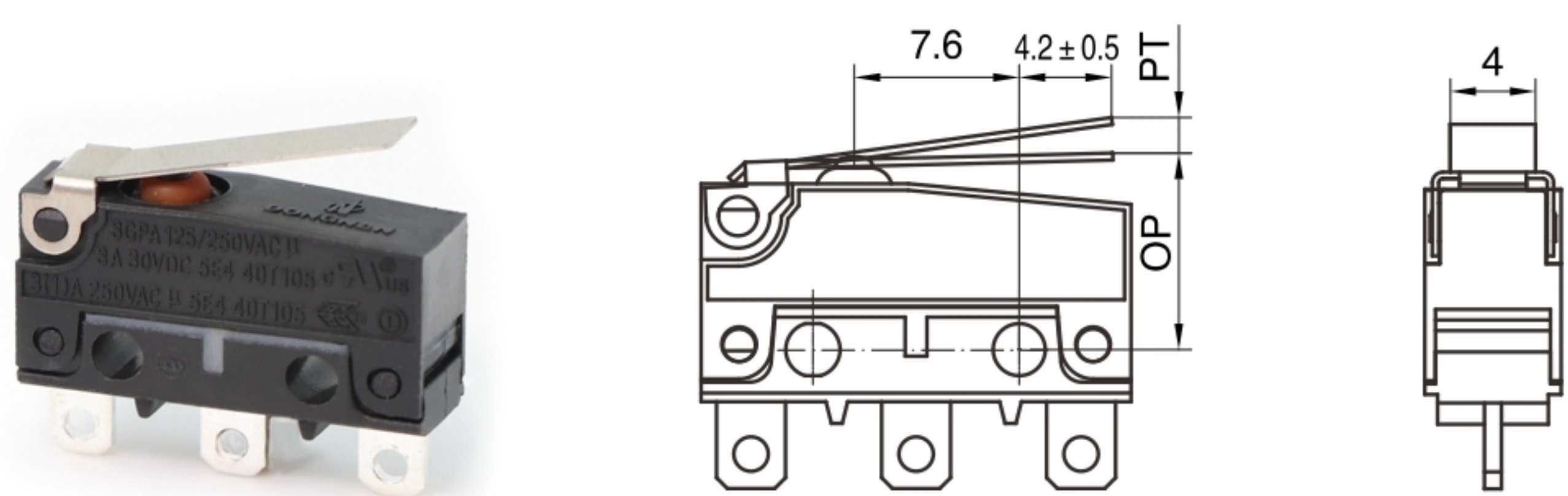
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

WS4-□ZB-H100
WS4-□ZB-H160



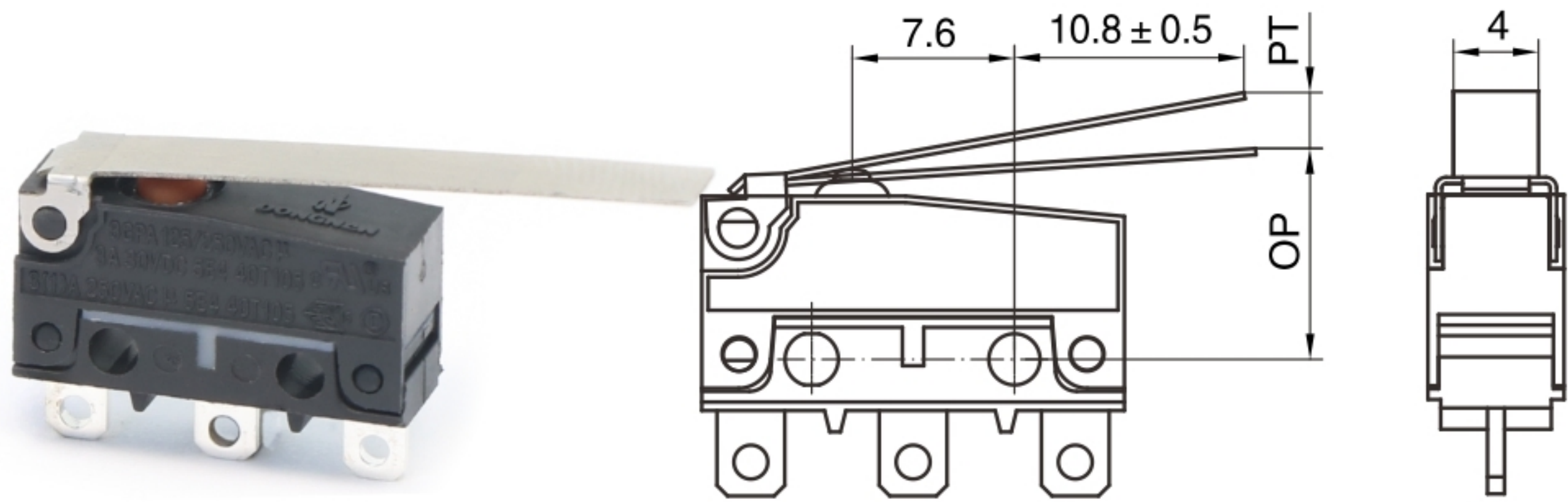
型號 Model	WS4-□ZB-H100	WS4-□ZB-H160
OF Max(N)	0.50	0.60
RF Min(N)	0.05	0.10
OT Min(mm)	0.8	
MD Max(mm)	0.5	
FP Max(mm)	13.0	
OP(mm)	10.0±1	

WS4-□ZH-H100
WS4-□ZH-H160



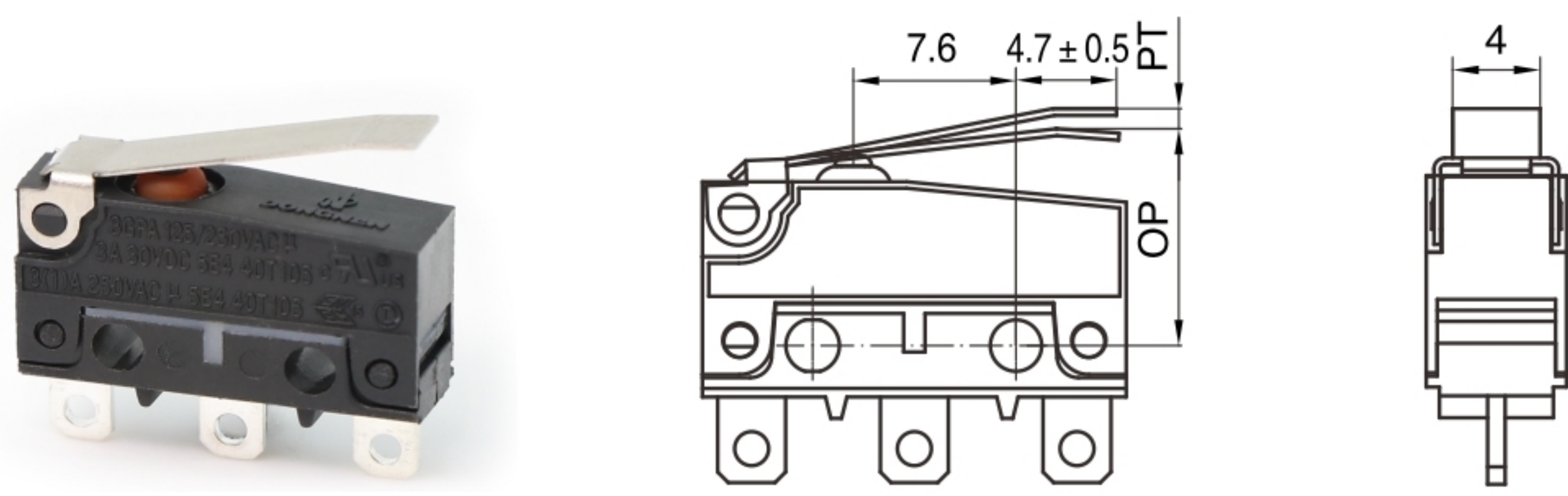
型號 Model	WS4-□ZH-H100	WS4-□ZH-H160
OF Max(N)	0.50	0.60
RF Min(N)	0.05	0.10
OT Min(mm)	0.8	
MD Max(mm)	0.5	
FP Max(mm)	12.0	
OP(mm)	9.4 ± 0.8	

WS4-□ZJ-H100
WS4-□ZJ-H160



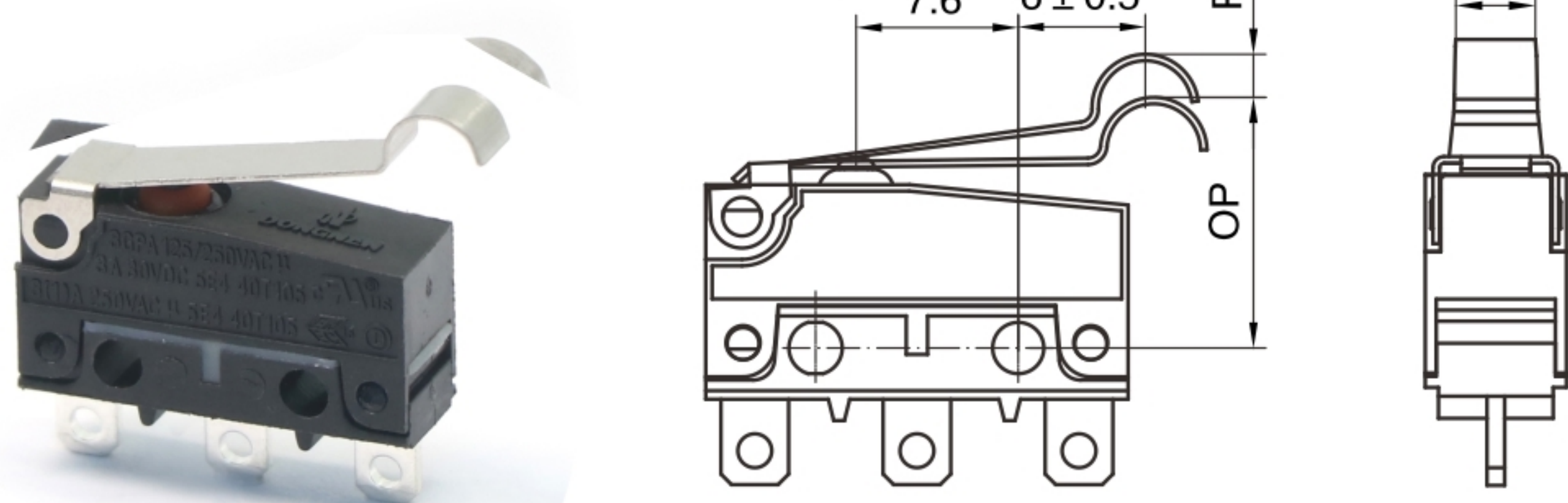
型號 Model	WS4-□ZJ-H100	WS4-□ZJ-H160
OF Max(N)	0.50	0.60
RF Min(N)	0.05	0.10
OT Min(mm)	0.8	
MD Max(mm)	0.5	
FP Max(mm)	13.5	
OP(mm)	9.9 ± 0.7	

WS4-□ZN-H100
WS4-□ZN-H160



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

WS4-□Z6-H100
WS4-□Z6-H160



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