

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 home 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 ² (約100G approx.100G)max 誤動作 Wrong action: 300m/s ² (約30G approx.30G)max | |
| 外殼防護等級 Case protection degree | 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 | | C: 1AGP 125/250VAC(UL) 1A 250VAC(EN) 5E4 40T125 |
| 2 接觸形式 Circuit | D: 0.1AGP 125/250VAC(UL) 0.1A 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. |
| | 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 安裝構造 installation structure |
| 3 驅動形式 Actuator forms | 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 | 7 附加規格編號 Arabic numerals | |
| | 4 端子類型 Terminal types | | F: 焊接端子 Solder terminal P: PCB端子 1 (0.6×0.5) PCBterminal 1 (0.6×0.5) B: PCB端子 2 (1.3×0.5) PCBterminal 2 (1.3×0.5) L: 左側面PCB端子 Left side PCB terminal |

◆ 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 |
| | | |

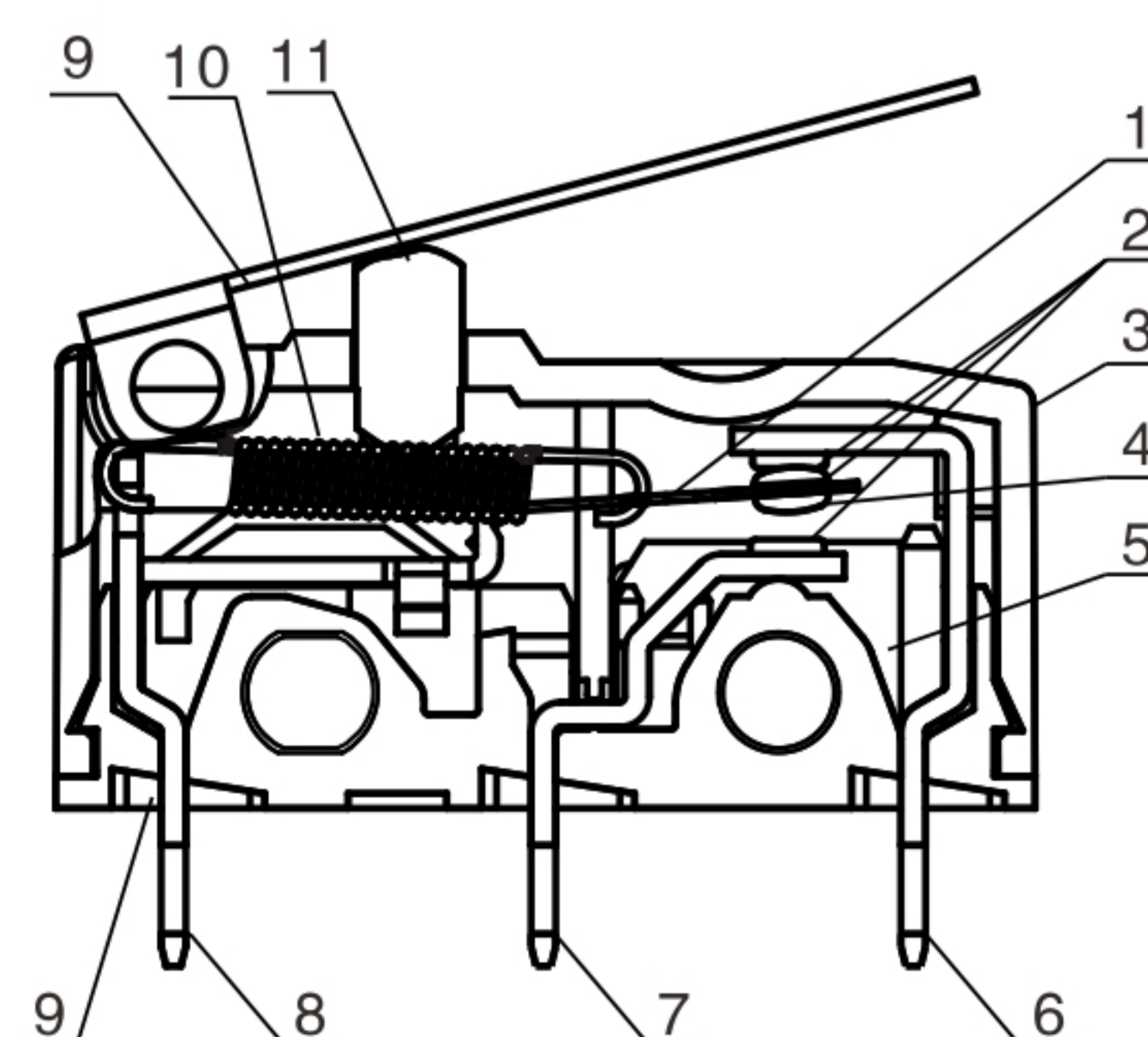
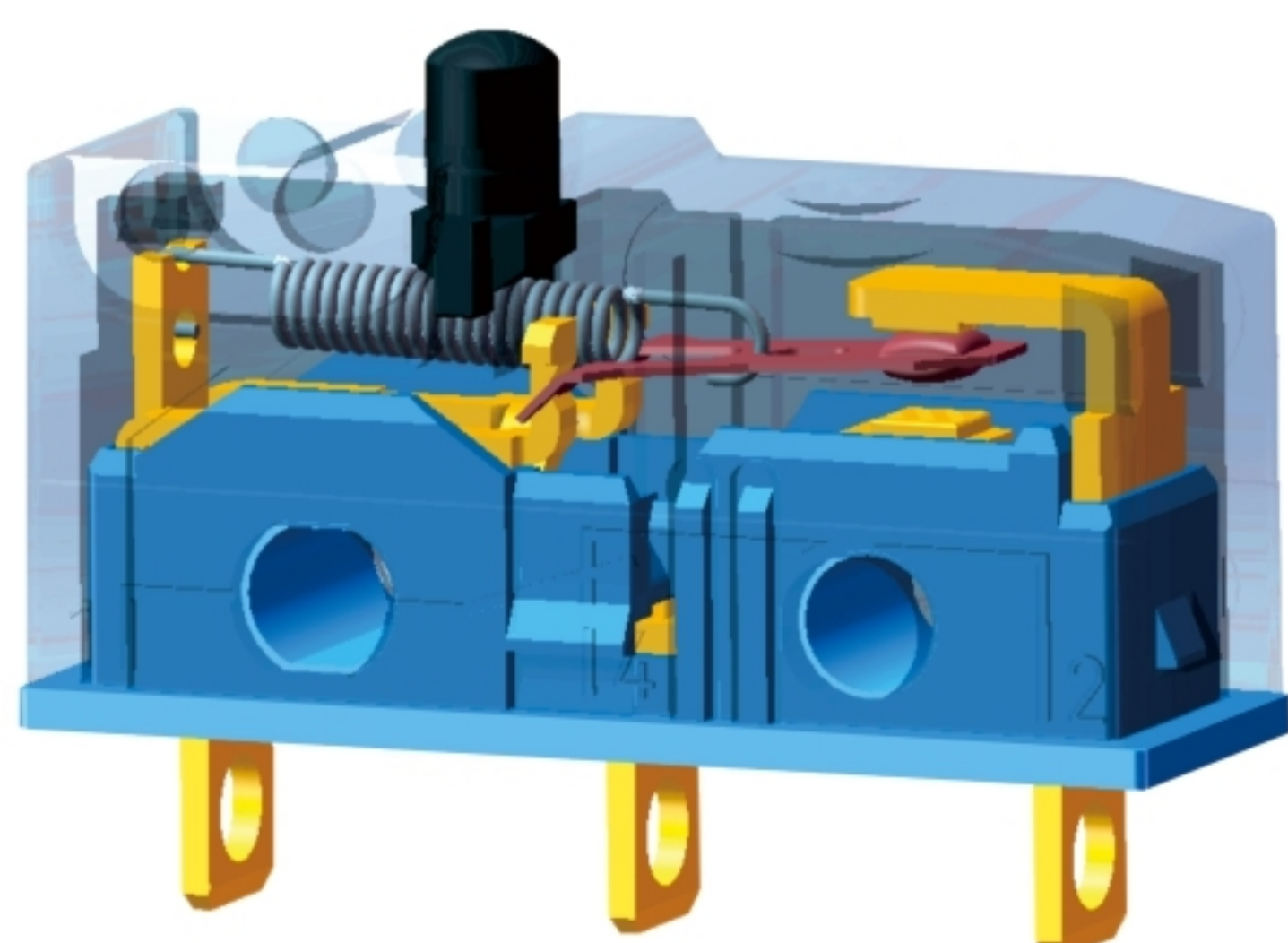
◆ 安裝孔尺寸 Mounting hole dimension

| | | |
|-------------------------|-------------------------|---|
| 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 |
|--------------|-----------------|-----------------|

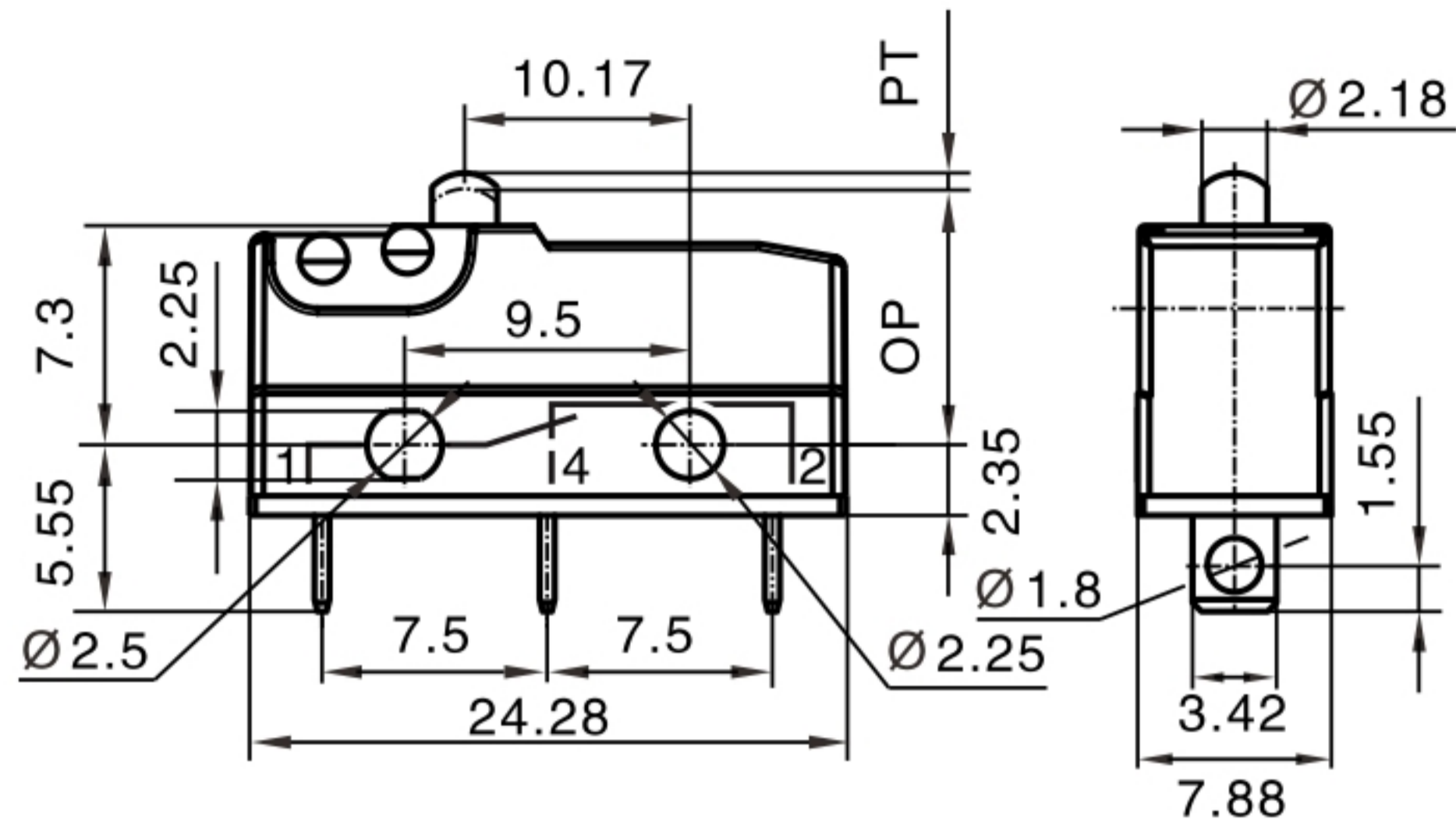
◆ 內部構造圖 Internal configuration drawing



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

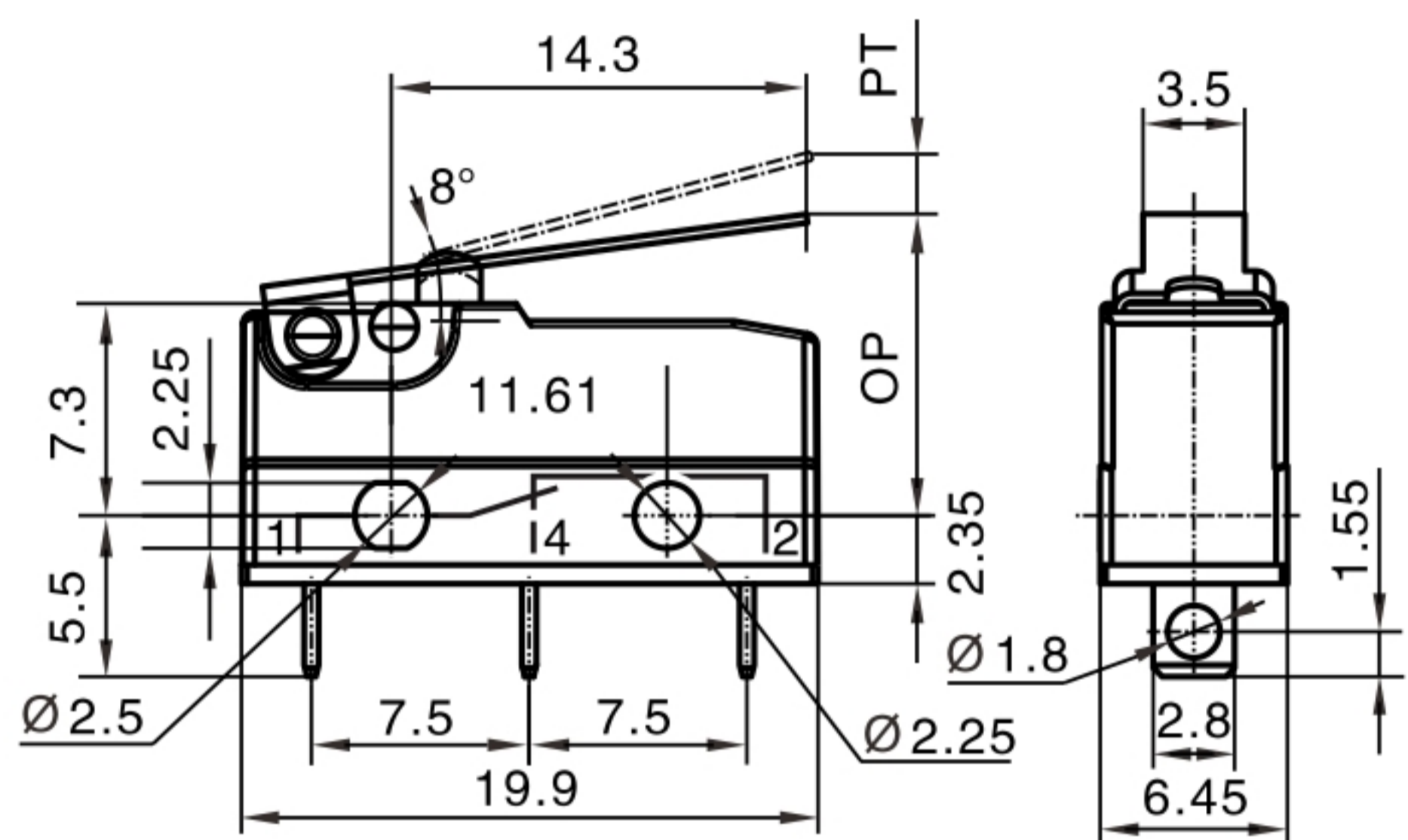
◆ 外形尺寸和動作特性 Dimensions and operating characteristics

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



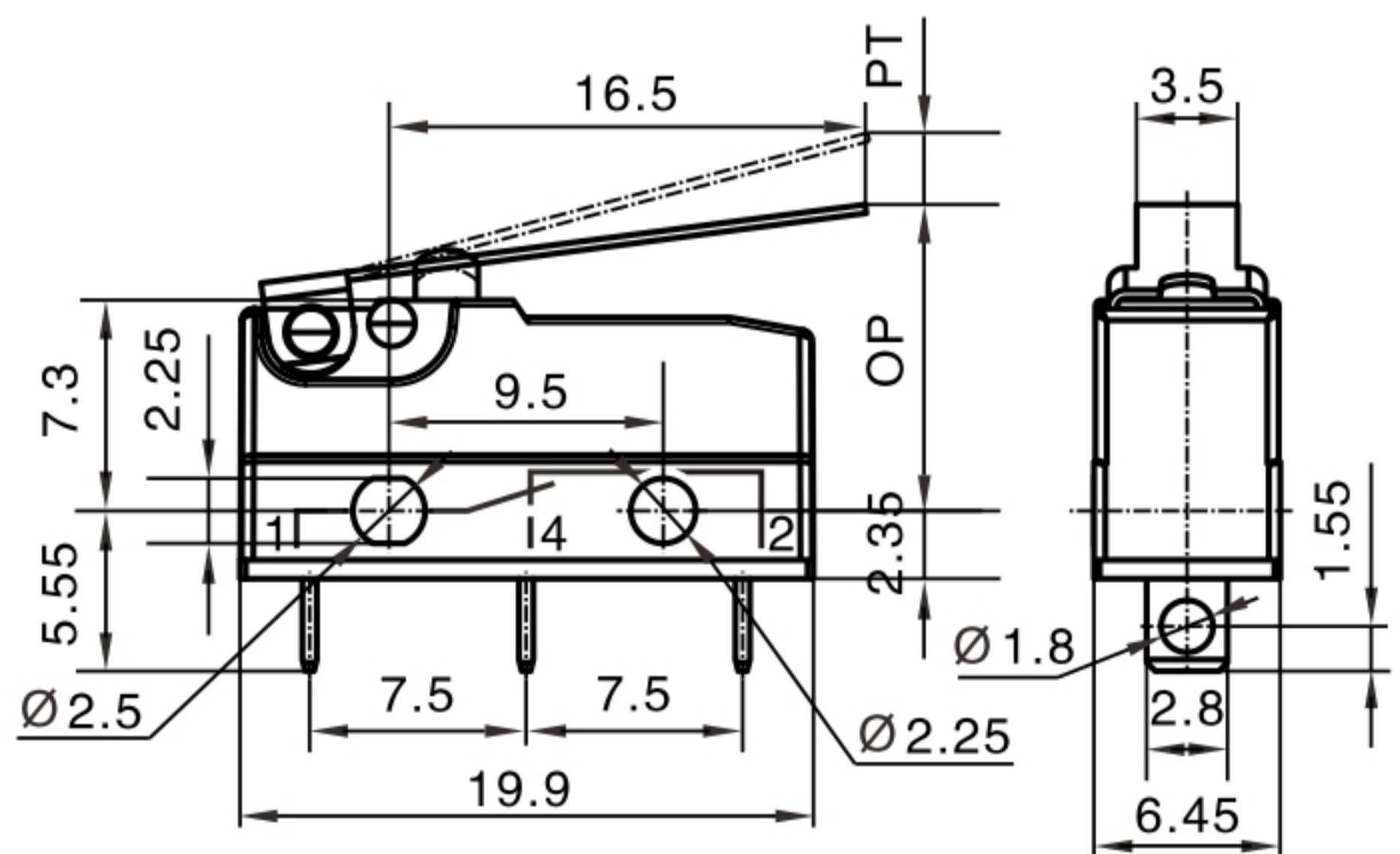
| 型號 Model | MS9-□Z0-F100 | MS9-□Z0-F150 | MS9-□Z0-F250 | MS9-□Z0-F300 |
|------------|--------------|--------------|--------------|--------------|
| OF Max(N) | 1.00 | 1.50 | 2.50 | 3.00 |
| RF Min(N) | 0.10 | 0.35 | 0.40 | 0.60 |
| PT Min(mm) | 1.1 | | | |
| OT Min(mm) | 0.6 | | | |
| MD Max(mm) |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

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



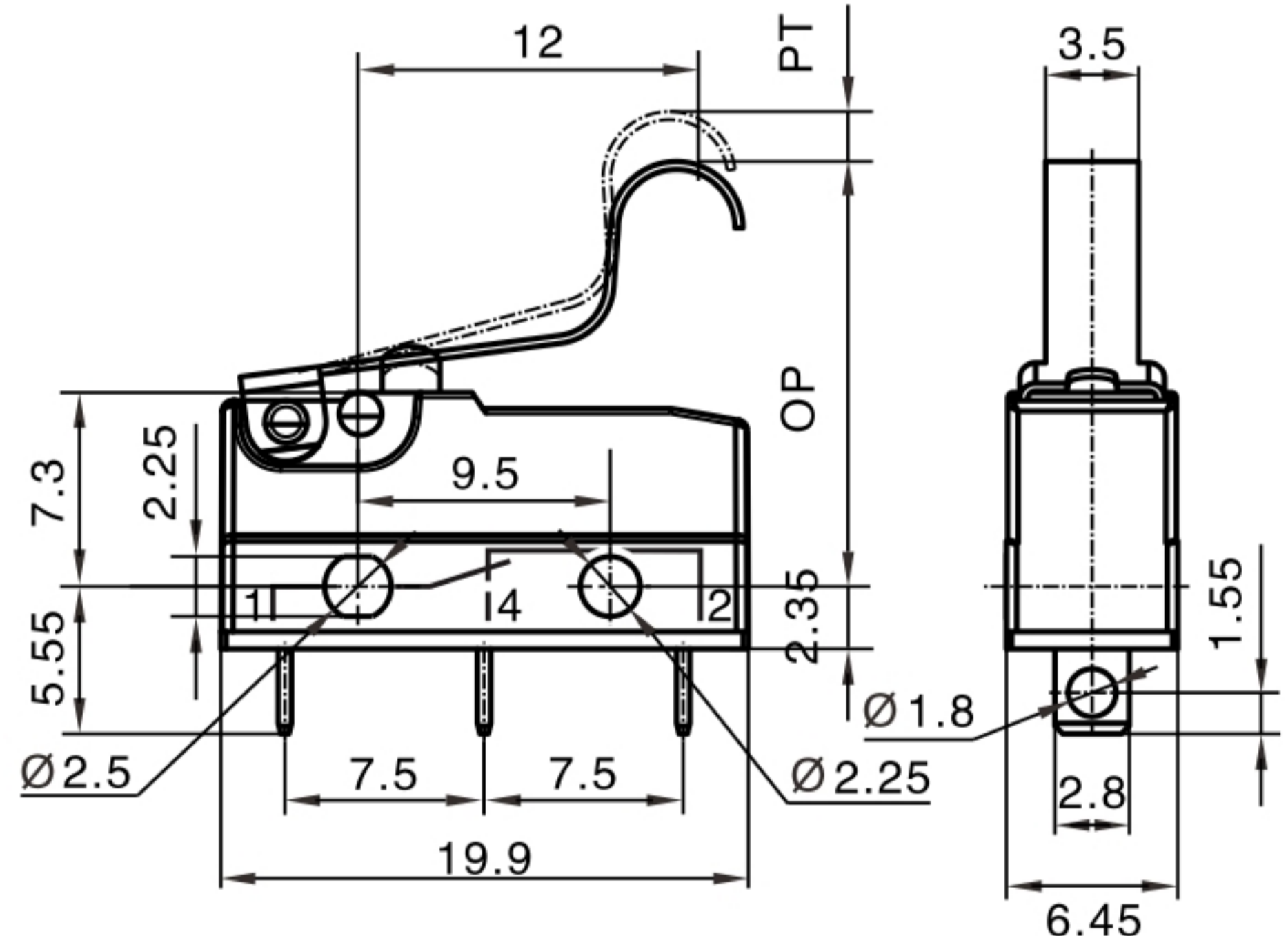
| 型號 Model | MS9-□Z3-F100 | MS9-□Z3-F150 | MS9-□Z3-F250 | MS9-□Z3-F300 |
|------------|--------------|--------------|--------------|--------------|
| OF Max(N) | 0.45 | 0.60 | 1.00 | 1.20 |
| RF Min(N) | 0.03 | 0.08 | 0.10 | 0.15 |
| PT Min(mm) | 4.00 | 4.00 | 4.50 | 4.50 |
| OT Min(mm) | 2.00 | 2.00 | 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



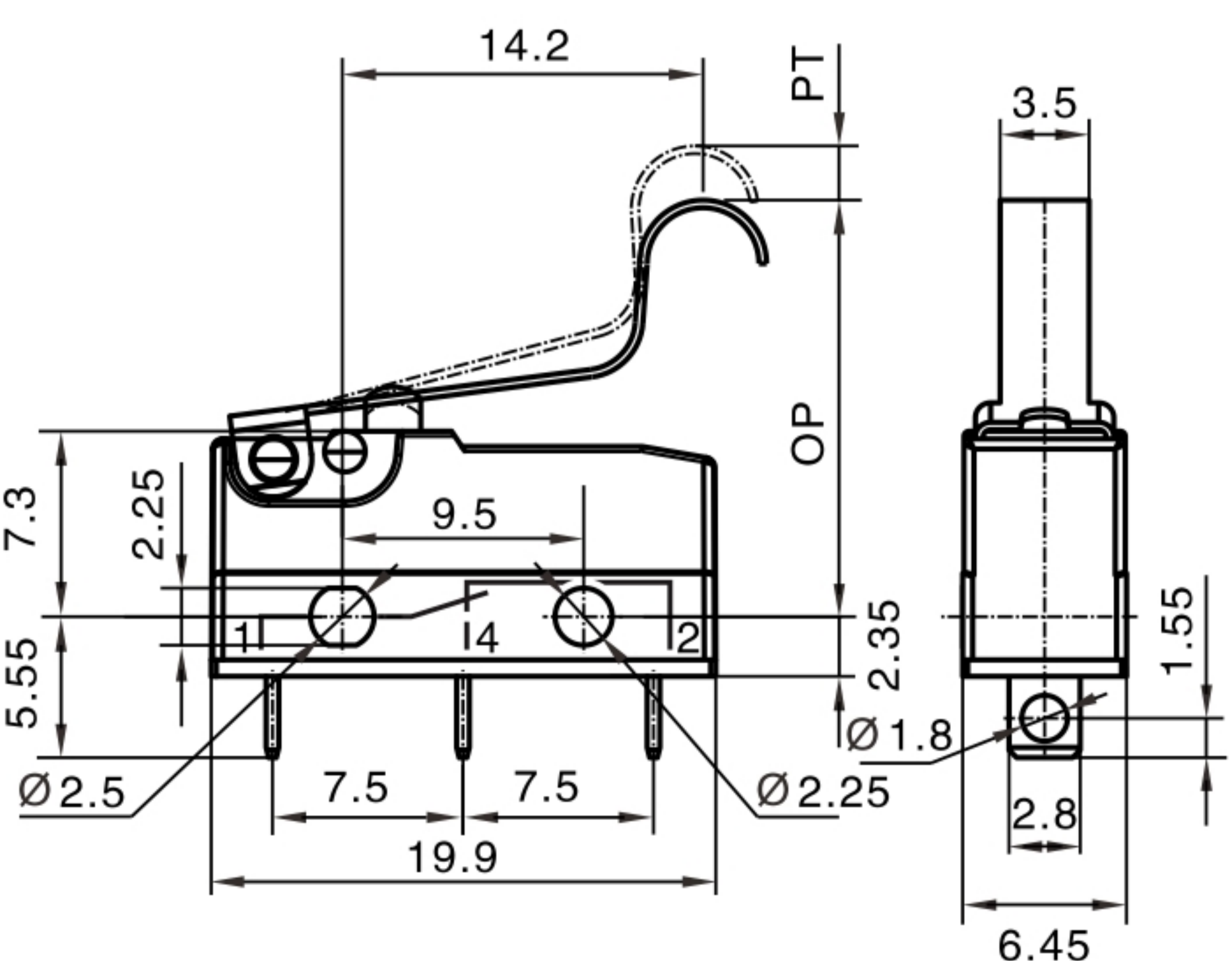
| 型號 Model | MS9-□Z2-F100 | MS9-□Z2-F150 | MS9-□Z2-F250 | MS9-□Z2-F300 |
|------------|--------------|--------------|--------------|--------------|
| OF Max(N) | 0.40 | 0.50 | 0.85 | 1.10 |
| RF Min(N) | 0.02 | 0.06 | 0.08 | 0.12 |
| PT Min(mm) | 4.50 | 4.50 | 5.00 | 5.00 |
| OT Min(mm) | 2.00 | 2.00 | 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 |