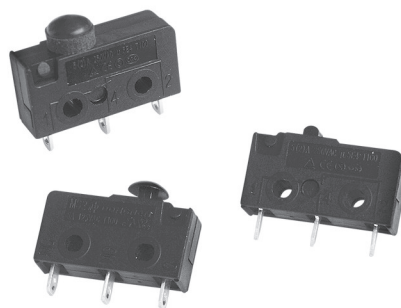


MS2型微動開關系列 Micro switch series

◆ 特點和用途 Characteristics and usage

- 具有一定的防護功能
Has protection function.
- 廣泛應用於各種家用電器，並可用於吸塵器等工作環境惡劣的器具。
Widely used in all kinds of home appliances, and also can be used in such as vacuum cleaner etc.appliances which works in bad conditions.



◆ 技術特性 Specifications

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		$\geq 100M\Omega$ (500VDC)
接觸電阻 Contact resistance		$\leq 50m\Omega$
耐電壓 Test voltage	同極不相接端子間 Between not connect terminals of the same polarity	AC1000V,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.	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
防觸電保護等級 Electric shock proof protection grade		Ⅱ 級 class
外殼防護等級 Degree protection provided by enclosure		IEC IP60 (特定規格 specific specification)
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、TUV、SEMKO、CE

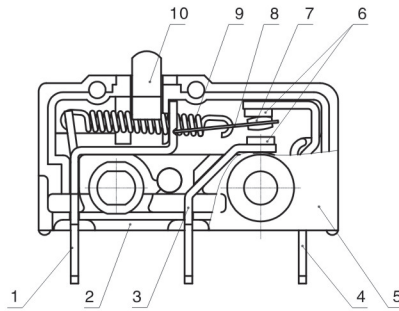
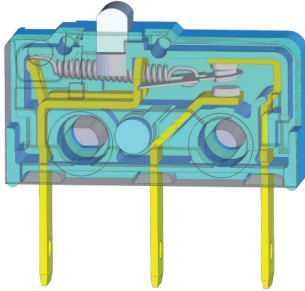
◆ 型號規格命名及含義 Model number legend and meanings

MS2 □-□□□□-□□□□-(□)
1 2 3 4 5 6 7 8 9 10

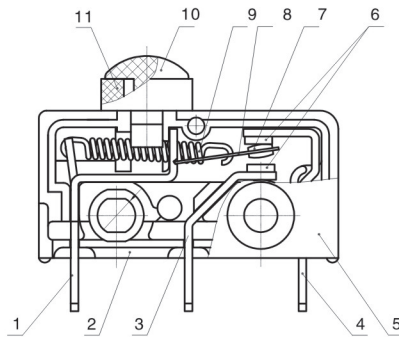
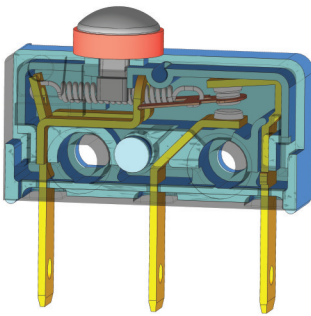
1 溫度等級 Degree of temperature	無標記 No mark: T100		F:焊接端子 solder terminal P:PCB端子 PCB terminal H:PCB端子之二 PCB terminal No.2 S:PCB端子之三 PCB terminal No.3 L:左側面PCB端子 Left side PCB terminal R:右側面PCB端子 Right side PCB terminal T:110快接端子 110 quick-connect Y:非標準端子 not standard terminal
2 額定值 Ratings	無標記 No mark: 5A125VAC 5(2)A250VAC 1/10hp250VACa	6 端子類型 Terminal types	
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)	7 動作力(MAX) Operating force	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.
4 驅動形式 Actuator forms	0:無動臂 No lever 3:中動臂 Middle lever	8 按鈕規格 Plunger specs	無標記 No mark:標準按鈕standard lever A: 非圓形按鈕 Not round plunger
5 外殼類型 Cover types	無標記 No mark: 上面無凸臺 no convexity upside C: 上面有凸臺 Has convexity upside (見說明圖See illustration)	9 防護等級 Degree protection provided by enclosure	無標記 No mark: 不密封Non sealed S: 密封Sealed IP60
		10 附加規格代號 Append specs 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. ■ 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.



◆ 内部構造圖 Internal configuration drawing



- | | |
|-------------|--------------|
| 1: 支架 | Support |
| 2: 基座 | Case |
| 3: 常開端子 | NO terminal |
| 4: 常閉端子 | NC terminal |
| 5: 蓋 | Cover |
| 6: 電觸點 | Contact |
| 7: 電觸點 | Contact |
| 8: 可動片 | Moving piece |
| 9: 拉簧 | Pull spring |
| 10: 開關子(按鈕) | Plunger |

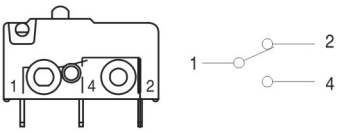
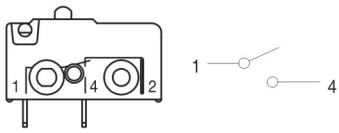
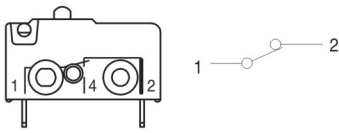


- | | |
|-------------|--------------|
| 1: 支架 | Support |
| 2: 基座 | Case |
| 3: 常開端子 | NO terminal |
| 4: 常閉端子 | NC terminal |
| 5: 蓋 | Cover |
| 6: 電觸點 | Contact |
| 7: 電觸點 | Contact |
| 8: 可動片 | Moving piece |
| 9: 拉簧 | Pull spring |
| 10: 開關子(按鈕) | Plunger |
| 11: 防塵圈 | Cushion |

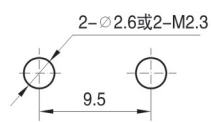
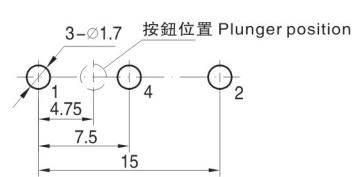
◆ 接線端尺寸 Terminal dimensions

F: 焊接端子 Solder terminal	T: 快接端子 #110 Quick connect terminal #110	P: PCB端子 PCB terminal
	H: PCB端子之二 PCB terminal No.2	S: PCB端子之三 PCB terminal No.3

◆ 接觸形式說明圖 Circuit illustration

轉換式 SPDT	常開式 SPST-NO	常閉式 SPST-NC
		

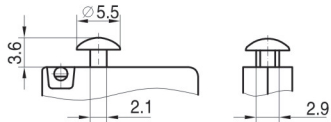
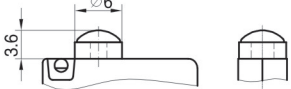
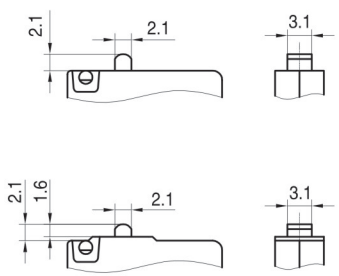
◆ 安裝孔尺寸 Mounting hole dimensions

	PCB端子 PCB terminal 
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◆ 外殼類型圖 Cover types drawing

無凸臺 No convexity	有凸臺 Has convexity
	

◆ 按鈕規格說明圖 Plunger spec illustration

標準按鈕 Standard plunger	標準按鈕(帶防塵圈) Standard plunger(has dust proof ring)	非圓形按鈕 Not round plunger
		

◆ 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60W以下，焊接時間在3s之內。若操作溫度過高或時間過長，可能導致開關特性劣化。

The iron capacity should be below 60W, joint time within 3s. If operate temperature is too high or time is too long, switch characteristic may be worsen

(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 the 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.

■ 關於絕緣距離 Concerning insulation distance

根據IEC 61058-1/EN 61058-1/GB 15092.1之規定，本開關的最小絕緣層厚度為1.1mm，端子和安裝板之間的最小空間距離為1.6mm。如果無法確保零部件所要求的絕緣距離，請使用絕緣護罩或隔板來保證絕緣距離。

According to IEC 61058-1/EN 61058-1/GB15092.1, the least thickness insulation layer should be 1.1mm, the smallest space distance between the terminal and install board is 1.6mm. If the parts insulation distance cannot be guaranteed please use insulate cover or the guard board to guarantee the insulation distance.

■ 關於安裝 Concerning installation

(1) 開關的安裝、拆卸和配線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M2.3螺釘，用平墊圈、彈簧墊圈等緊固，並請使用0.23~0.26N·m的緊固轉矩。

When installing, please use 2 M2.3 screws, then tight it with flat washer, spring washer, and also tight with 0.23~0.26N·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.

