

**微動開關系列**  
MICRO SWITCH SERIES

KW3A

KW4A

KW4A(S)

KW10

MS1

MS2

MS3

MS5

MS10

**WS3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.

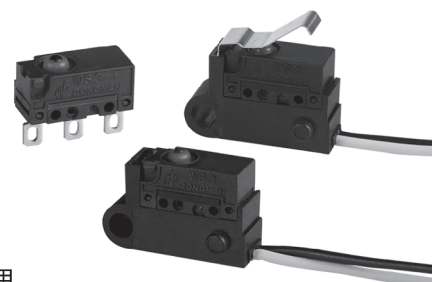
- 配備焊接端子、PCB端子和帶導線端子

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、農業機械、大型家電、辦公設備等有耐環境性要求的場合使用。

Can be used in environment resistant places and equipment, apparatus outdoors such as automobile, automat, refrigerator, ice machine, bath equipment, water heater and air condition etc.


**◆ 技術特性 Technical Characteristics**
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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

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RS1

RS2

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**其他開關系列**  
OTHER SWITCH SERIES

SP02

KXZ2

PRS1

| 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<br>Mechanical 60 cycles/min; electrical 25 cycles/min         |
| 絕緣電阻 Insulation resistance                        |                                                                                                                      | ≥ 100MΩ (500VDC)                                                                     |
| 接觸電阻 Contact resistance                           |                                                                                                                      | ≤ 50mΩ (不帶導線型 Without wire)                                                          |
| 耐電壓<br>Test voltage                               | 不相接端子間<br>Between non-continuous terminals                                                                           | AC600V, 50/60Hz, 1min                                                                |
|                                                   | 端子與不帶電金屬件之間<br>端子與地(外殼)之間<br>Between each terminal and other exposed metal parts<br>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 <sup>2</sup> (30G)<br>接觸故障持續時間不超過1ms Contact opening max. 1 msec.     |
| 防觸電保護等級<br>Electric shock proof protection grade  |                                                                                                                      | I 級 class                                                                            |
| 外殼防護等級<br>Degree protection provided by enclosure |                                                                                                                      | IEC IP50 (端子型 Terminal type)<br>IEC IP67 (導線型 Wire leads type)                       |
| 壽命 Life                                           |                                                                                                                      | 機械 ≥ 100,000次 Mechanical ≥ 100,000 cycles<br>電氣 ≥ 10,000次 Electrical ≥ 10,000 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

WS3 □-□□□-□□□-□□-(□)  
1 2 3 4 5 6 7 8 9 10

|                                           |                                                                                                                                                                                                                             |                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1</b><br>溫度等級<br>Degree of temperature | 無標記 No mark: 40T85                                                                                                                                                                                                          | <b>7</b><br>安裝孔尺寸代號<br>Mounting hole dimension code                       | A:Ø1.2<br>B:Ø2.3<br>C:Ø3<br>L:左側面固定銷 left side fixed pin type<br>R:右側面固定銷 Right side fixed pin type<br>D:雙側面固定銷 Both sides fixed pin type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>2</b><br>額定值<br>Ratings                | 無標記No mark:<br>2GPA125V/250VAC<br>2RA125/250VAC<br>3A30VDC<br>WS3-F:<br>0.1GPA125V/250VAC<br>0.1RA125/250VAC<br>5mA30VDC                                                                                                    | <b>8</b><br>導線長度<br>Wire length                                           | 用毫米數表示<br>Indicate with number- "mm"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>3</b><br>接觸形式<br>Circuit               | Z:轉換式 SPDT<br>T:常開(按通)式 SPST-NO<br>D:常閉(按斷)式 SPST-NC<br>(見說明圖See illustration)                                                                                                                                              | <b>9</b><br>防護等級<br>Degree protection provided by enclosure               | 無標記 No mark:<br>IP50(端子型terminal type)<br>IP67(導線型 wire leads type)<br>IP□□: 其它等級 Other class                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>4</b><br>驅動形式<br>Actuator forms        | 0:無動臂 No lever<br>3:直動臂 Straight lever<br>5:滾輪動臂 Roller<br>6:弧形動臂 Arc lever<br>8:葉片形動臂 Leaf lever<br>L:長行程式驅動<br>Long stroke type<br>□:非標準動臂<br>Not standard lever<br>注:□ 表示非標準動臂的代號<br>Note:□ Indicate not standard lever. | <b>10</b><br>附加規格代號及<br>導線顏色配置代號<br>Append specs code and wire color code | 適用於apply to:<br>1) 當開關使用了非標準零件如非標準端子時;<br>When used not standard parts such as not standard terminal.<br>2) 當顧客有特殊動作特性值或其它要求時;<br>When customer has particular operating value or other requirements.<br>3) 當導線顏色不是默認的配置顏色時。<br>When the wire color is not the default color.<br>■ 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。<br>Additional spec number shows as 01, 02, 03……If there is no additional numbers, the place is vacant.<br>■ 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)。<br>Wire color code: indicate with 3 letters, the order is COM、NC、NO; If NO or NC, vacant place shows o.<br>(Color code: red-R, white-W, black-B, green-G, blue-L, yellow-Y, grey-H, purple-P)<br>示例 example: BWR, BOR, RWO<br>■ 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。<br>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.<br>示例 example: 02BWR |
| <b>5</b><br>端子類型<br>Terminal type         | F:焊接端子 Solder terminal<br>P:PCB端子 PCB terminal<br>B:底部導線型<br>Bottom wire leads type<br>L:左面導線型<br>Left side wire leads type<br>R:右面導線型<br>Right side wire leads type<br>Y:非標準端子<br>Not standard terminal                    |                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>6</b><br>動作力(max)<br>Operating force   | 150: 1.5N<br>200: 2.0N<br>250: 2.5N<br>注:若是非標準動作力, 用此動作力上限值表示。<br>Note: if it is not standard operating force, indicate with the upper limit.                                                                               |                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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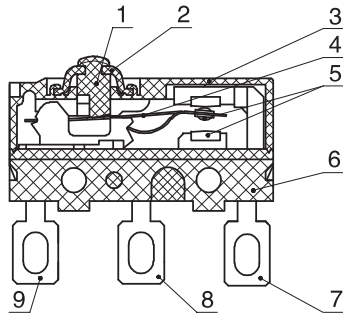
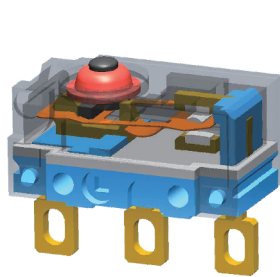
RS3

**其他開關系列**  
OTHER SWITCH SERIES

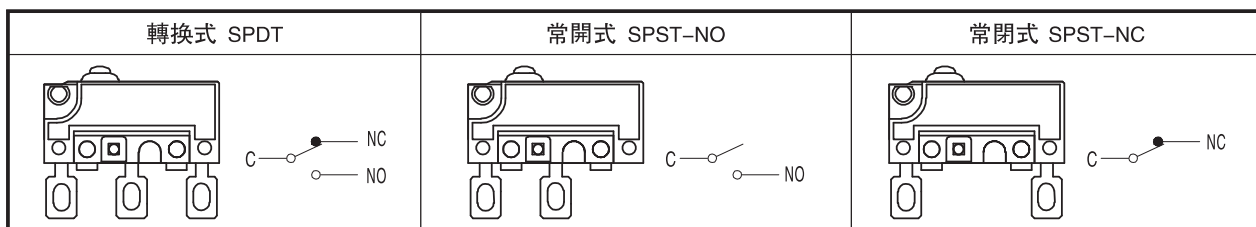
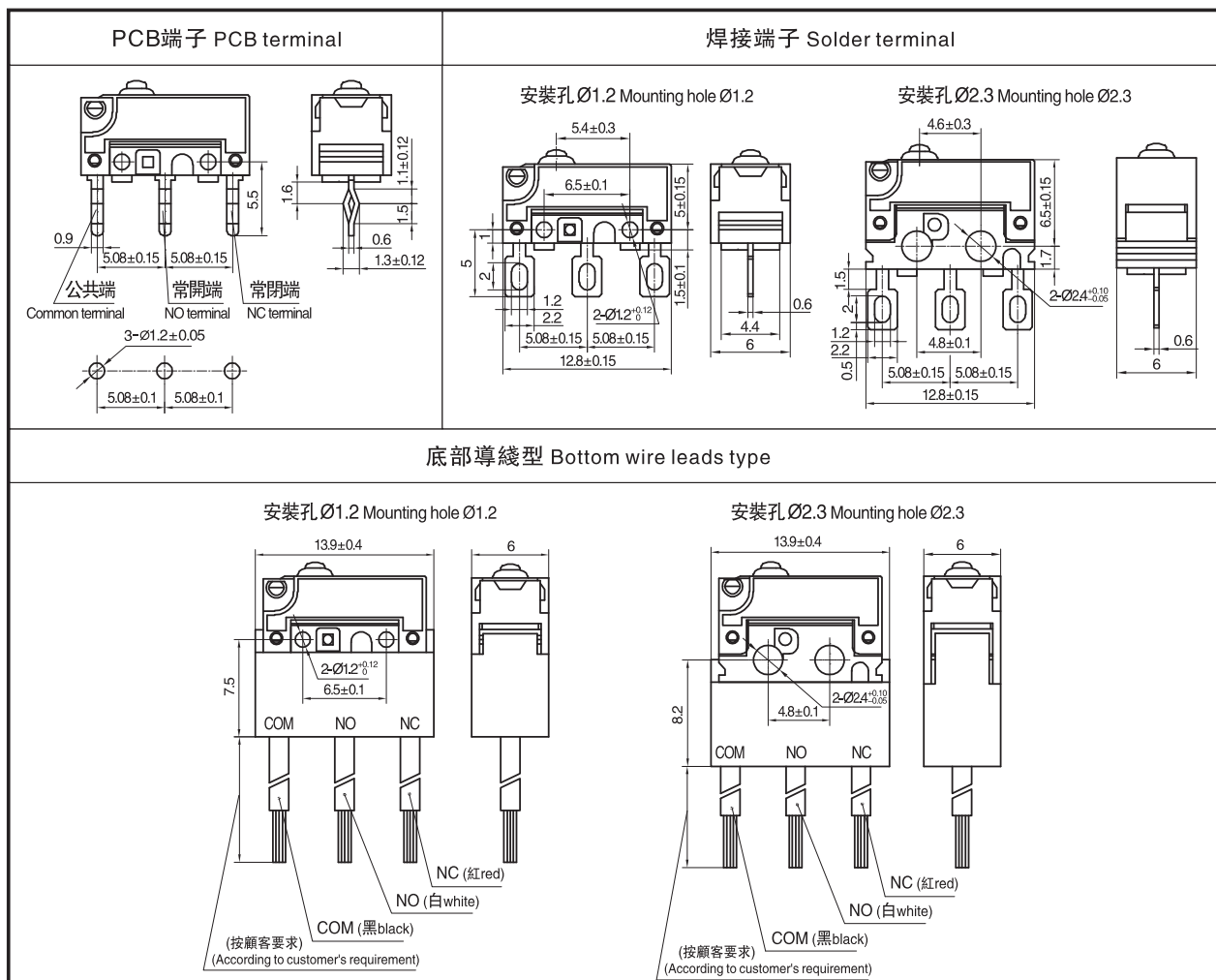
SP02

KXZ2

PRS1

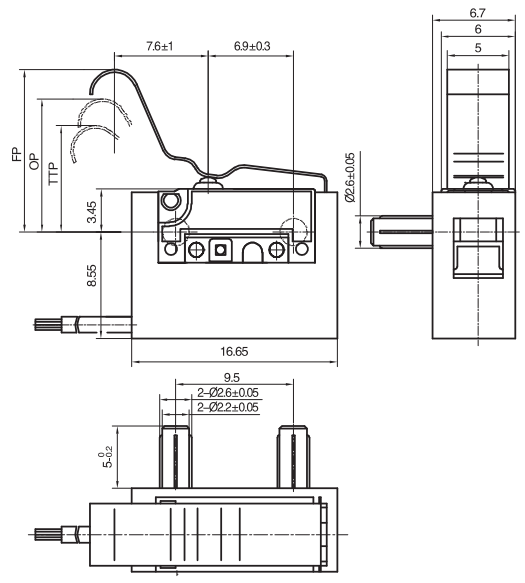
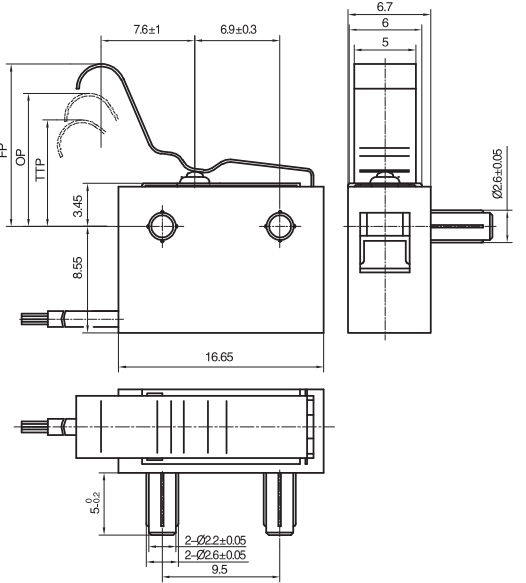
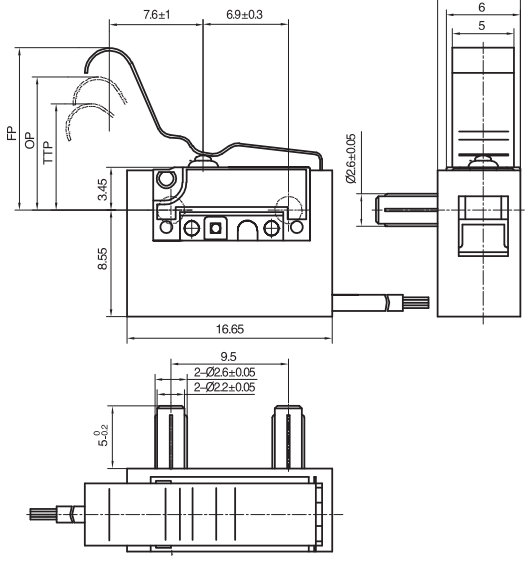
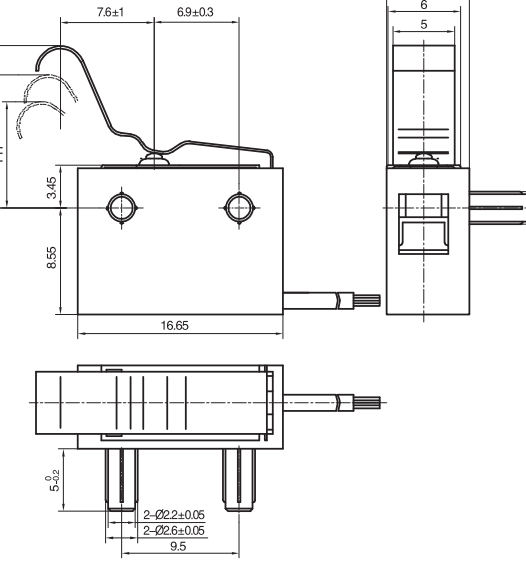
**◆ 內部構造圖 Internal configuration drawing**


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

**◆ 接觸形式說明圖 Circuit illustration**

**◆ 端子類型及安裝尺寸說明圖 Terminal types and mounting dimension illustration**


Since 1995, we focus on switches

◆ 端子類型及安裝尺寸說明圖 Terminal types and mounting dimension illustration

|                                                                                                                                                                 |                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>左側面導線 Left side wire leads type<br/>左側面固定銷 Left side fixed pin type</p>    | <p>左側面導線 Left side wire leads type<br/>右側面固定銷 Right side fixed pin type</p>    |
| <p>右側面導線 Right side wire leads type<br/>左側面固定銷 Left side fixed pin type</p>  | <p>右側面導線 Right side wire leads type<br/>右側面固定銷 Right side fixed pin type</p>  |

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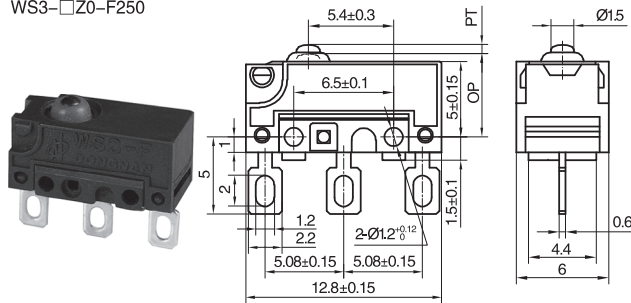
PRS1



Since 1995, we focus on switches

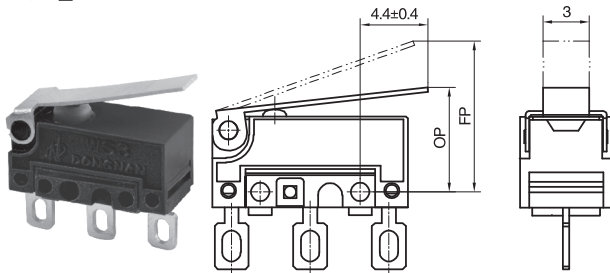
# ◆ 外形尺寸和動作特性 Dimensions and operating characteristics

WS3-□Z0-F150  
WS3-□Z0-F200  
WS3-□Z0-F250



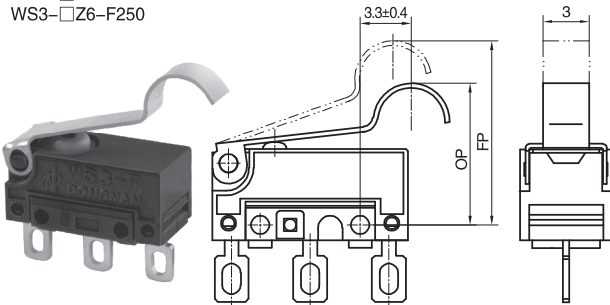
| 型號 Model   | WS3-□Z0-F150 | WS3-□Z0-F200 | WS3-□Z0-F250 |
|------------|--------------|--------------|--------------|
| OF Max(N)  | 1.50         | 2.00         | 2.50         |
| RF Min(N)  | 0.10         | 0.20         | 0.30         |
| PT Max(mm) | 0.6          |              |              |
| OT Min(mm) | 0.2          |              |              |
| MD Max(mm) | 0.2          |              |              |
| OP(mm)     | 5.5 ± 0.3    |              |              |

WS3-□Z3-F150  
WS3-□Z3-F200  
WS3-□Z3-F250



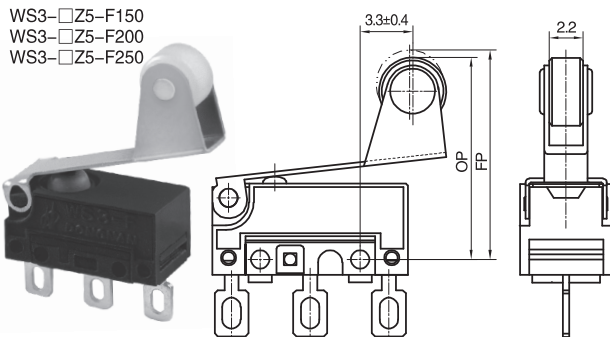
| 型號 Model   | WS3-□Z3-F150 | WS3-□Z3-F200 | WS3-□Z3-F250 |
|------------|--------------|--------------|--------------|
| OF Max(N)  | 0.50         | 0.80         | 1.00         |
| RF Min(N)  | 0.05         | 0.10         | 0.15         |
| OT Min(mm) | 0.5          |              |              |
| MD Max(mm) | 0.6          |              |              |
| FP Max(mm) | 11.0         |              |              |
| OP(mm)     | 6.8 ± 1.2    |              |              |

WS3-□Z6-F150  
WS3-□Z6-F200  
WS3-□Z6-F250



| 型號 Model   | WS3-□Z6-F150 | WS3-□Z6-F200 | WS3-□Z6-F250 |
|------------|--------------|--------------|--------------|
| OF Max(N)  | 0.50         | 0.80         | 1.00         |
| RF Min(N)  | 0.05         | 0.10         | 0.15         |
| OT Min(mm) | 0.5          |              |              |
| MD Max(mm) | 0.6          |              |              |
| FP Max(mm) | 14.0         |              |              |
| OP(mm)     | 9.8 ± 1.2    |              |              |

WS3-□Z5-F150  
WS3-□Z5-F200  
WS3-□Z5-F250



| 型號 Model   | WS3-□Z5-F150 | WS3-□Z5-F200 | WS3-□Z5-F250 |
|------------|--------------|--------------|--------------|
| OF Max(N)  | 0.50         | 0.80         | 1.00         |
| RF Min(N)  | 0.05         | 0.10         | 0.15         |
| OT Min(mm) | 0.5          |              |              |
| MD Max(mm) | 0.6          |              |              |
| FP Max(mm) | 17.0         |              |              |
| OP(mm)     | 13.1 ± 1.2   |              |              |

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