

# HL-93 立式安全門限位開關 Vertical Interlock Safety Limit Switch

## 型號說明 Model Number Structure

HL-□□□□  
1 2 3 4

| 項次 Designation | 代號 Model NO. | 說明 Description          |
|----------------|--------------|-------------------------|
| 1              | 93           | 系列號 Serial number       |
| 2              | 11           | 松繩開關 Loose rope switch  |
|                | 12           | 松鏈開關 Loose chain switch |
| 3              | B            | YY(2NC)                 |
|                | C            | ZB(1NC/1NO)             |
|                | E            | Y(1NC)                  |
| 4              | 無 Nothing    | 標準型 Standard form       |

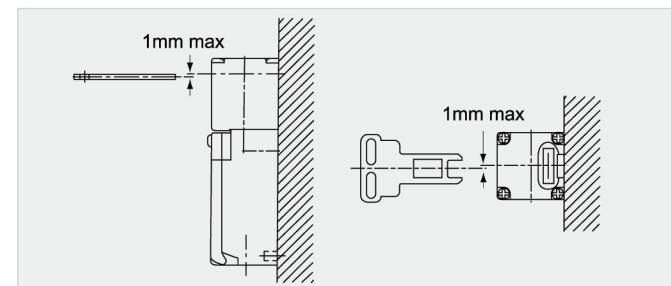
注：導管連接器尺寸常規默認為M20x1.5。  
NOTE: The default size of conduit connector is M20x1.5.

## 額定值 Ratings

| 額定電壓<br>Rated Voltage | 非電感性負載<br>Noninductive Load (A) |     |                   |     | 電感性負載<br>Inductive Load (A) |     |                    |    |
|-----------------------|---------------------------------|-----|-------------------|-----|-----------------------------|-----|--------------------|----|
|                       | 電阻性負載<br>Resistance Load        |     | 燈泡負載<br>Lamp Load |     | 電感性負載<br>Inductive Load     |     | 馬達負載<br>Motor Load |    |
|                       | NC                              | NO  | NC                | NO  | NC                          | NO  | NC                 | NO |
| 125 VAC               | 10                              | 3   | 1.5               | 10  | 5                           | 2.5 |                    |    |
| 250 VAC               | 10                              | 2   | 1                 | 10  | 3                           | 1.5 |                    |    |
| 400 VAC               | 10                              | 1.5 | 0.8               | 3   | 1.5                         | 0.8 |                    |    |
| 8 VDC                 | 10                              | 6   | 3                 | 10  | 6                           | 6   |                    |    |
| 14 VDC                | 10                              | 6   | 3                 | 10  | 6                           | 6   |                    |    |
| 30 VDC                | 6                               | 4   | 3                 | 6   | 4                           | 4   |                    |    |
| 125 VDC               | 0.8                             | 0.2 | 0.2               | 0.8 | 0.2                         | 0.2 |                    |    |
| 250 VDC               | 0.4                             | 0.1 | 0.1               | 0.4 | 0.1                         | 0.1 |                    |    |

## 使用注意事項 Cautions

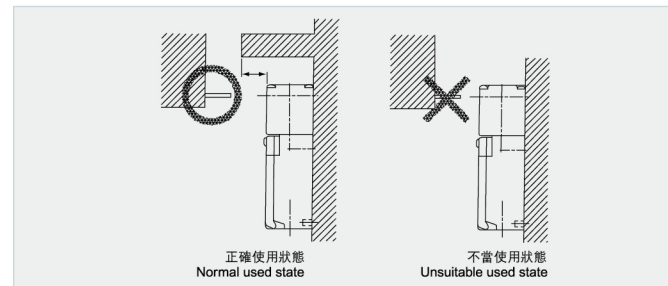
鑰匙與插入孔之中心上下左右位置應在1mm以內，以避免機構磨耗和破壞。  
To prevent the wear and the space should be within 1mm between the key and middle of the insert hole.



## 規格 Specifications

|                                   |                                                                                                                                                                                                           |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 額定電流 Rating                       | 3A 240VAC (A300)                                                                                                                                                                                          |
| 操作速度 Operating speed              | 0.1m~0.5m/s                                                                                                                                                                                               |
| 動作頻率 Operating frequency          | 30次/分30 operations/min                                                                                                                                                                                    |
| 接點電阻 Contact resistance           | 25mΩ以下(初期)25mΩ max. (initial).                                                                                                                                                                            |
| 絕緣電阻 Insulation resistance        | 100mΩ以上(在500VDC以下)<br>100mΩ min. (at 500VDC)                                                                                                                                                              |
| 絕緣電壓 Rated insulation voltage(Ui) | 400V                                                                                                                                                                                                      |
| 電介強度 Dielectric strength          | AC2500V/Uimp 4KV                                                                                                                                                                                          |
| 振動 Vibration                      | 10至55Hz, 1.5mm雙振幅<br>10 to 55Hz, 1.5mm double amplitude                                                                                                                                                   |
| 衝擊 Shock                          | 機械耐久: 1000m/s <sup>2</sup> 以上(約100G以上)<br>誤動作耐久: 300m/s <sup>2</sup> 以上(約30G以上)<br>Mechanical: Approx. 1000m/s <sup>2</sup> (Approx. 100G' S)<br>Electrical: Approx. 300m/s <sup>2</sup> (Approx. 30G' S) |
| 使用溫度 Ambient temperature          | -20~+70℃(沒有結冰)Using: -20~+70℃ (With no icing)                                                                                                                                                             |
| 使用濕度 Ambient Humidity             | < 95% RH                                                                                                                                                                                                  |
| 電氣壽命 Electrical life              | 15萬次以上<br>150,000 operations/min.                                                                                                                                                                         |
| 防水等級 Protection level             | IP65                                                                                                                                                                                                      |

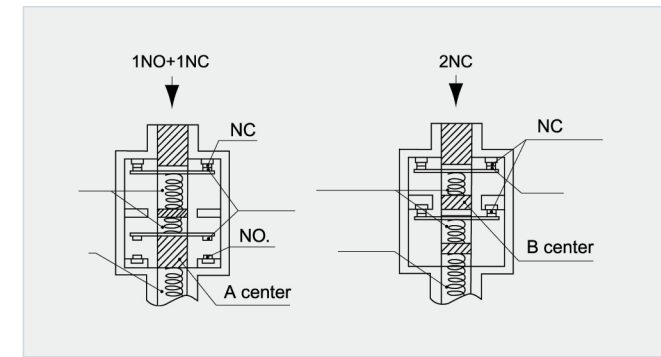
使用開關時，應于上方設置一擋板，以防止鑰匙過于插入使機構損壞。而擋板與開關間a之距離應在3mm以下，以防止不動作。  
When in use, there should put a plate on the top to prevent the key overinsert. To prevent nonmovement, the space between the plate and the switch should be under 3 mm.



## HL-93 立式安全門限位開關

## Vertical Interlock Safety Limit Switch

### 強制斷開機構 Forced Disconnecting Mechanism



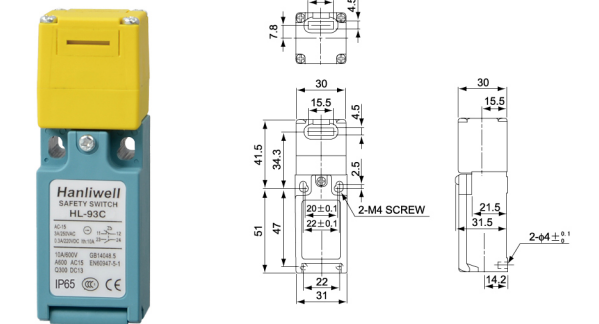
NC接點的強制脫離機構，作用是當接點發生熔着時，下壓鑰匙機構中心，可將接點強制推開，使回路切斷。(EN60947-5-1強制脫離認定)。  
When the contact block get fire, press on the middle of the key structure, the NC strict leaving structure can push the contact block a way cut off the movement.

### 動作特性 Operating Characteristics

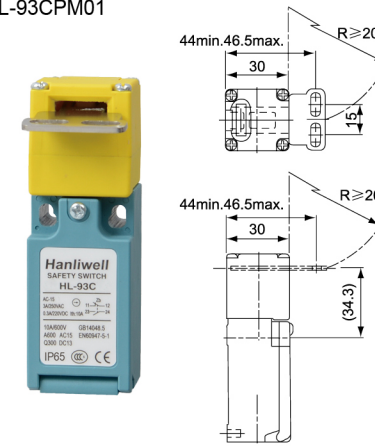
|                                       |    |                 |
|---------------------------------------|----|-----------------|
| 操作插入力量 Key plug in force              | 最大 | 14.7N(1,500gf)  |
| 操作抽動力量 Key pull out force             | 最大 | 29.42N(3,000gf) |
| 動作距離 Pretravel                        |    | 6 ± 3mm         |
| 總行程 Total travel                      |    | (28mm)          |
| 強制脫離力 Force required to have positive | 最小 | 58.84N(6,000gf) |
| 強制脫離距離 Positive opening travel        | 最小 | 10mm            |

### 外觀和尺寸 Appearance and Dimension

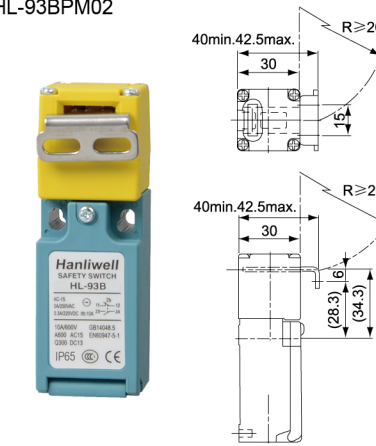
#### HL-93CPM



#### HL-93CPM01



#### HL-93BPM02

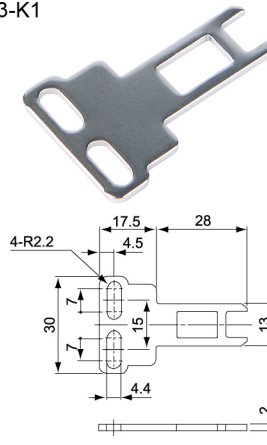


#### HL-93CPM03

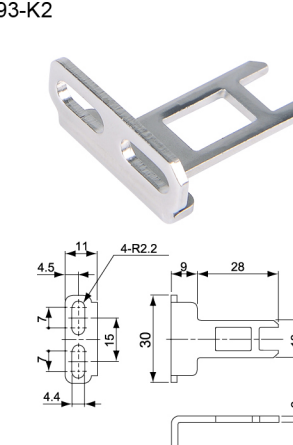


### 鑰匙種類及尺寸 Key Dimension

#### HL93-K1



#### HL93-K2



#### HL93-K3

