

**NEW-FLOW**

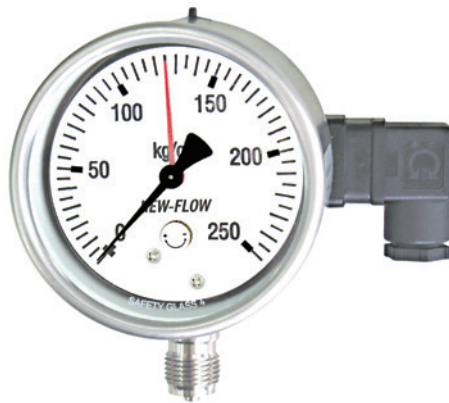
**ISO 9001  
REGISTERED**

# **NEW-FLOW**

MANUFACTURE OF PRESSURE GAUGE WITH MICRO SWITCH  
**PIS5000** (Weather Proof Type) & **PIS5000X** (Explosion Proof Type)  
AND CONTROL INSTRUMENTS

壓力錶附開關操作說明書

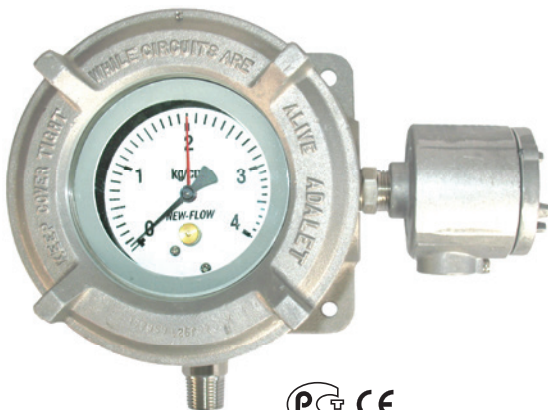
## **Instruction Manual**



*(Bottom Connection)*



*Panel Mounting  
(Back Connection)*



*(Bottom Connection)*



PATENT NO.  
M337067

PATENT NO.  
M337067



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Instruction No.: 20141119-0-pis5000(x)



# 1.0 INTRODUCTION & DESCRIPTION

## Technical Data 規格說明

PIS5000– Weather Proof Type	PIS5000X– Explosion Proof Type																														
<p><b>Dial:</b> ø4", ø6" available;</p> <p><b>Material:</b> Bourdon tube SS316; Wetted parts SS316</p> <p><b>Housing:</b> SS304</p> <p><b>Protection Class:</b> IP66</p> <p><b>Lens:</b> Safety glass</p> <p><b>Blow-out:</b> Back ø25mm (1")</p> <p><b>Pressure Limited:</b> Over range protected 130% of full scale range</p> <p><b>Accuracy:</b> Gauge indication ±1.0% F.S</p> <p><b>Span Range &amp; Zero Adjustable</b></p> <p><b>Process Connection:</b> ½"NPT male Bottom or Back connection ; option with adaptor available</p> <p><b>Electronic Connection:</b> DIN43650, Universal plug connector; option with adaptor available</p> <p><b>Switch Form:</b> One setting point: SPDT x 1 ; Two setting points: SPDT x 2 available</p> <p><b>Set Point:</b> Please check the Range Selection Table for SPDT x 1 &amp; SPDT x 2</p> <p><b>Switch Dead Band:</b> ±2% of Full Scale</p> <p><b>Switch Data:</b></p> <table border="1"> <thead> <tr> <th></th> <th>AC Load</th> <th>DC Load</th> </tr> </thead> <tbody> <tr> <td>Nominal Operating Voltage</td> <td>250 VAC max.</td> <td>28 VDC max.</td> </tr> <tr> <td>Current</td> <td>5A max.</td> <td>5A max. (ohmic load) 3A max. (inductive load)</td> </tr> <tr> <td>Contact Material</td> <td>Pure silver 999.9</td> <td>Pure silver 999.9</td> </tr> <tr> <td>Ambient Temperature</td> <td>-20°C~+70°C</td> <td>-20°C~+70°C</td> </tr> </tbody> </table>		AC Load	DC Load	Nominal Operating Voltage	250 VAC max.	28 VDC max.	Current	5A max.	5A max. (ohmic load) 3A max. (inductive load)	Contact Material	Pure silver 999.9	Pure silver 999.9	Ambient Temperature	-20°C~+70°C	-20°C~+70°C	<p><b>Dial:</b> ø6"</p> <p><b>Material:</b> Bourdon tube SS316; Wetted parts SS316</p> <p><b>Housing:</b> Die cast aluminum alloy</p> <p><b>Protection Class:</b> Class I, Groups A,B,C,D; Class II, Groups E,F,G; NEMA 4X</p> <p><b>Pressure Limited:</b> Over range protected 130% of full scale range</p> <p><b>Accuracy:</b> Gauge indication ±1.0% F.S</p> <p><b>Process Connection:</b> 3/8", 1/2"NPT; option with adaptor available</p> <p><b>Electronic Connection:</b> ½"NPT; option with adaptor available</p> <p><b>Switch Form:</b> One setting point: SPDT x 1 ; Two setting points: SPDT x 2 available</p> <p><b>Set Point:</b> Full scale range available</p> <p><b>Switch Dead Band:</b> Please check the Range Selection Table for SPDT x 1 &amp; SPDT x 2</p> <p><b>Switch Data:</b></p> <table border="1"> <thead> <tr> <th></th> <th>AC Load</th> <th>DC Load</th> </tr> </thead> <tbody> <tr> <td>Nominal Operating Voltage</td> <td>250 VAC max.</td> <td>28 VDC max.</td> </tr> <tr> <td>Current</td> <td>5A max.</td> <td>5A max. (ohmic load) 3A max. (inductive load)</td> </tr> <tr> <td>Contact Material</td> <td>Pure silver 999.9</td> <td>Pure silver 999.9</td> </tr> <tr> <td>Ambient Temperature</td> <td>-20°C~+70°C</td> <td>-20°C~+70°C</td> </tr> </tbody> </table>		AC Load	DC Load	Nominal Operating Voltage	250 VAC max.	28 VDC max.	Current	5A max.	5A max. (ohmic load) 3A max. (inductive load)	Contact Material	Pure silver 999.9	Pure silver 999.9	Ambient Temperature	-20°C~+70°C	-20°C~+70°C
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## Range Selection Table– Kg/Cm<sup>2</sup> 壓力範圍

### PIS5000– Weather Proof Type

Code	Range	Dead Band		Code	Range	Dead Band		Code	Range	Dead Band		Code	Range	Dead Band	
		SPDTx1	SPDTx2			SPDTx1	SPDTx2			SPDTx1	SPDTx2			SPDTx1	SPDTx2
000	0~(-1)	±2.5%	±5%	004	0~4	±2%	±4%	008	0~20	±2%	±2%	012	0~100	±2%	±2%
001	0~1	±2%	±5%	005	0~6	±2%	±2%	009	0~25	±2%	±2%	013	0~160	±2%	±2%
002	0~1.6	±2%	±4%	006	0~10	±2%	±2%	010	0~40	±2%	±2%	014	0~250	±2%	±2%
003	0~2.5	±2%	±4%	007	0~16	±2%	±2%	011	0~60	±2%	±2%	015	0~400	±2%	±2%

### PIS5000X– Explosion Proof Type

Code	Range	Dead Band		Code	Range	Dead Band		Code	Range	Dead Band		Code	Range	Dead Band	
		SPDTx1	SPDTx2			SPDTx1	SPDTx2			SPDTx1	SPDTx2			SPDTx1	SPDTx2
000	0~(-1)	±2.5%	±5%	004	0~4	±2%	±4%	008	0~20	±2%	±2%	012	0~100	±2%	±2%
001	0~1	±2%	±5%	005	0~6	±2%	±2%	009	0~25	±2%	±2%	013	0~160	±2%	±2%
002	0~1.6	±2%	±4%	006	0~10	±2%	±2%	010	0~40	±2%	±2%	014	0~250	±2%	±2%
003	0~2.5	±2%	±4%	007	0~16	±2%	±2%	011	0~60	±2%	±2%	015	0~400	±2%	±2%

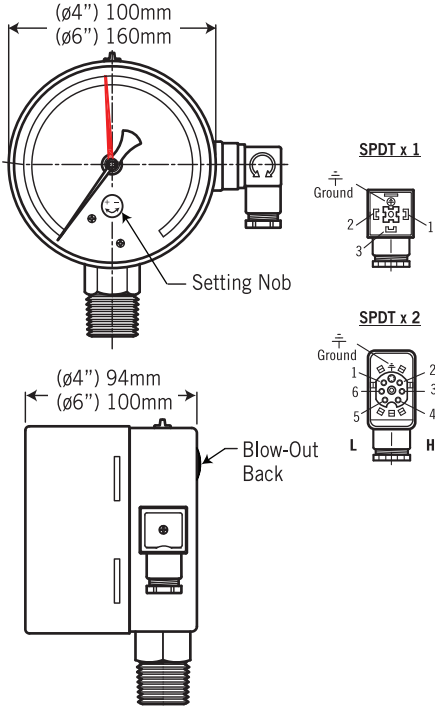
- NOTE.: 1. Scale Unit: MPa, Kg/Cm<sup>2</sup>, Bar available  
 2. 1 bar= 0.1 MPa, 1 bar= 1.01972 kg/cm<sup>2</sup>, 1 Pa= 1 x 10<sup>-6</sup> MPa, 1 MPa= 10.197 kg/cm<sup>2</sup>  
 3. Special Vacuum is available. Please check the code 000 as above.

# 2.0 DIMENSIONS

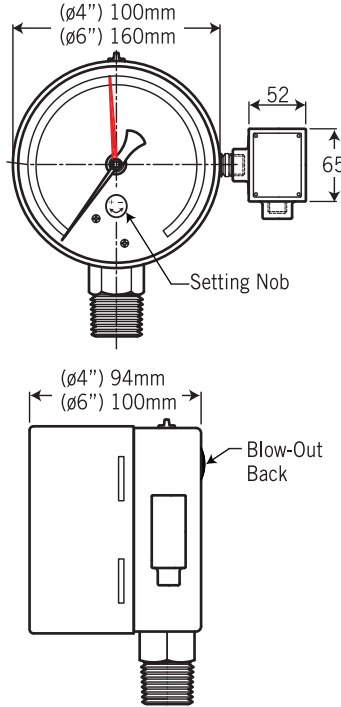
## Dimensions 尺寸

### PIS5000– Weather Proof Type

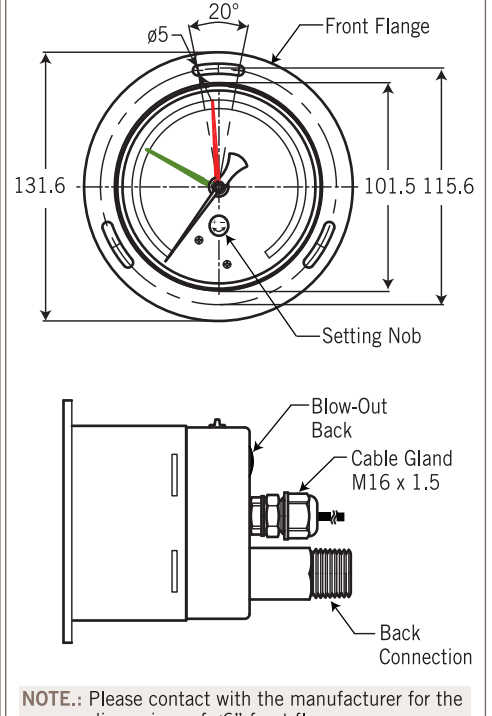
**1. Connection Size:** ½”NPT male, Bottom  
**Conduit:** Plug universal connector, M20 x 1.5 cable connection



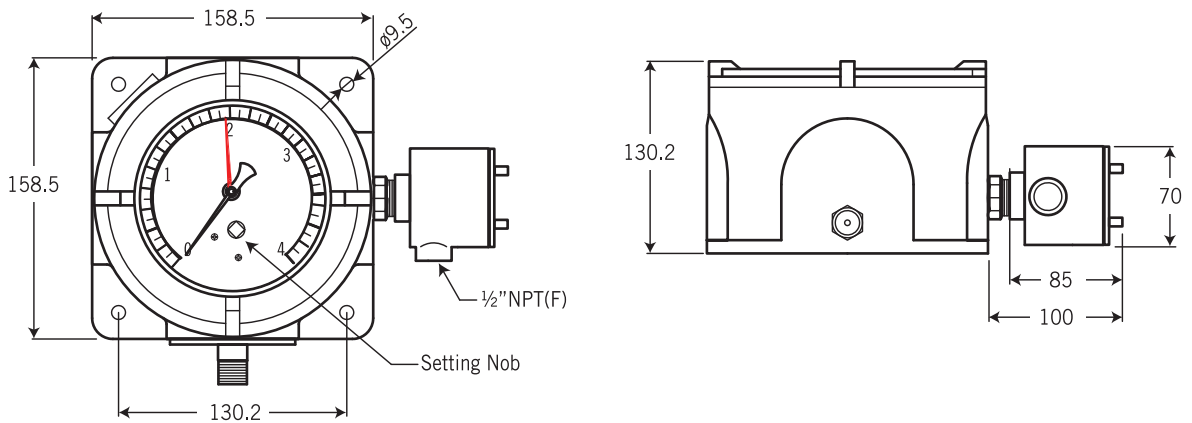
**2. Connection Size:** ½”NPT male, Bottom  
**Conduit:** ½”NPT female



**3. Connection Size:** ½”NPT male, Back  
**Cable Gland:** M16 x 1.5



### PIS5000X– Explosion Proof Type

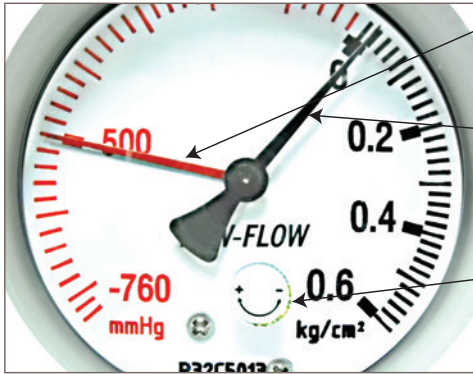


unit=mm

# 3.0 INSTRUCTION- SPDT x 1

## Instruction Manual of One Setting Point 單開關操作說明

(A) Figure and Function 構造及功能:



**RED INDICATOR (FOR ALARM)**

Function: Indicate the alarm set point.

紅色設定點指針

功能：用於指示設定點的設定值。

**BLACK INDICATOR**

Function: Indicate process pressure value.

黑色指針

功能：指示現在的壓力值。

**SET KNOB**

Function: To operate and set the red indicator.

Turn the knob clockwise to increase the value of the setpoint.

Turn the knob counterclockwise to decrease.

設定旋鈕

功能：用於操作設定指針。

順時針轉動設定鈕，設定值增大；

反之，逆時針轉動則設定值減少。

(B) Setting Steps 設定步驟:



**STEP. 1**

First of all, please unscrew the cover by counterclockwise.

首先，請逆時針方向打開上蓋。



**STEP. 2**

**Correct Setting Method:**

Please adjust the Set Knob by hand to make the Red Indicator on the graduation of setpoint value what customer requires.

正確的設定方式：

請用手指轉動設定鈕使設定點指針到達所要求的設定值刻度點上。



**STEP. 3**

**Incorrect Setting Method:**

Please notice that, Do Not move the Red Indicator directly by hand! In order to avoid the incorrect setpoint, and malfunction of setting components.

錯誤的設定方式：

請勿用手直接移動設定點指針，以免造成設定點誤差，及設定元件無法與設定指針同步。



**STEP. 4**

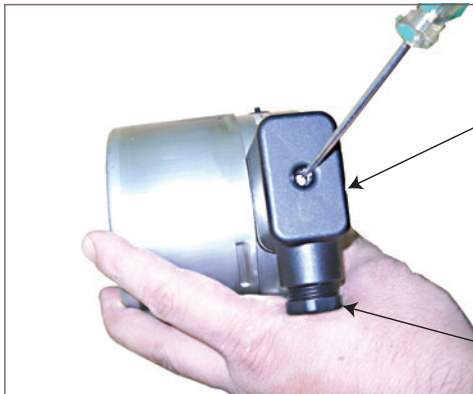
Set up finished, please screw the cover tightly by clockwise to prevent the water penetration.

設定好後，請順時針方向將上蓋鎖緊，以防止水氣進入。



# 3.0 INSTRUCTION- SPDT x 1

## (C) Junction Box of Plug Universal Connector 接線盒:



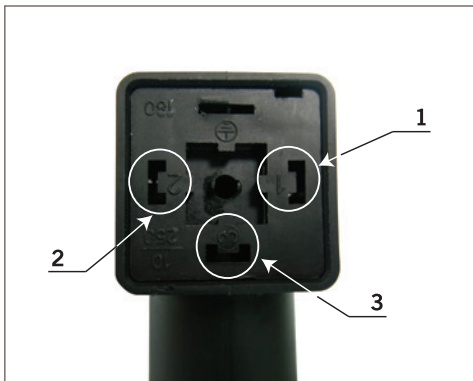
Junction Box  
接線盒

Plug Universal Connector, M20 x 1.5 cable connection  
出線口為M20 x 1.5 cable connection

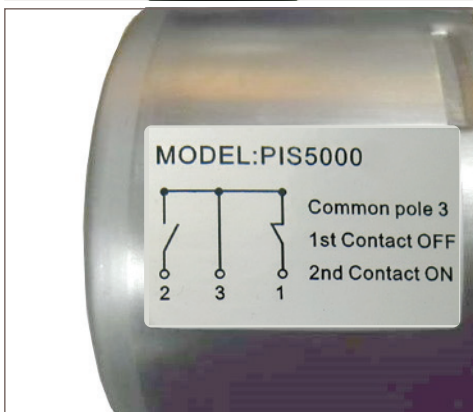
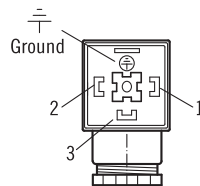


Please loosen the screw on the top by cross-head screwdriver counterclockwise, and take off the junction box cover.

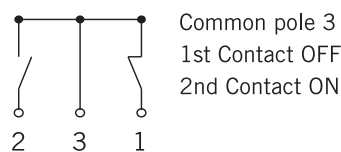
請使用十字螺絲起子將螺絲逆時針鬆開後，再打開接線盒蓋子。



Junction Terminal Board, SPDT x 1  
SPDT x 1接線組



Wiring Drawing: SPDT x 1  
接線圖標示SPDT x 1



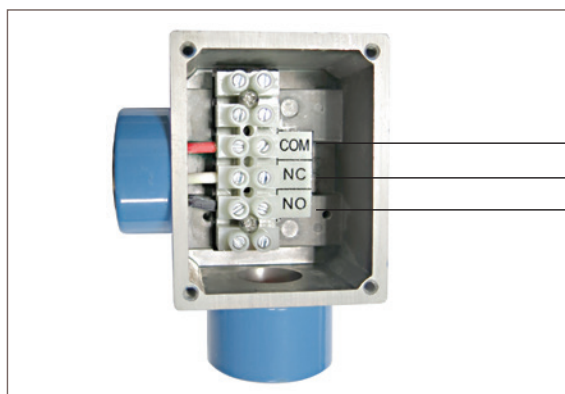
### 3.0 INSTRUCTION- SPDT x 1

(D) Junction Box of 1/2"NPT Connection 接線盒:



Junction Box  
接線盒

Conduit is 1/2"NPT female  
出線口為1/2"NPT female



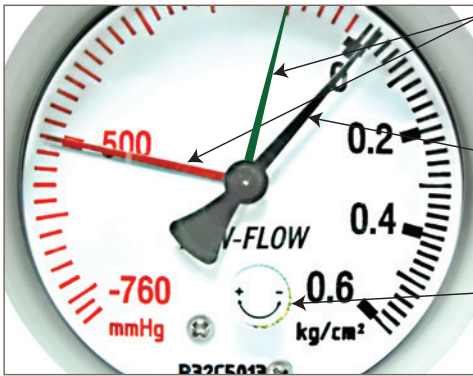
SPDT x 1

COM	Red Wire 紅線
NC	White Wire 白線
NO	Black Wire 黑線

## 4.0 INSTRUCTION- SPDT x 2

### Instruction Manual of Two Setting Points 雙開關操作說明

#### (A) Figure and Function 構造及功能:



#### **RED INDICATOR (FOR Hi Alarm)**

Function: Indicate the Hi alarm set point.

紅色設定點指針

功能: 用於指示Hi設定點的設定值。

#### **GREEN INDICATOR (FOR Lo Alarm)**

Function: Indicate the Lo alarm set point.

綠色設定點指針

功能: 用於指示Lo設定點的設定值。

#### **BLACK INDICATOR**

Function: Indicate process pressure value.

黑色指針

功能: 指示現在的壓力值。

#### **SET KNOB**

Function: To operate and set the red indicator.

Turn the knob clockwise to increase the value of the setpoint.

Turn the knob counterclockwise to decrease.

設定旋鈕

功能: 用於操作設定指針。

順時針轉動設定鈕，設定值增大；

反之，逆時針轉動則設定值減少。

#### (B) Setting Steps 設定步驟:



#### **STEP. 1**

First of all, please unscrew the cover by counterclockwise.

首先，請逆時針方向打開上蓋。



#### **STEP. 2**

##### **Correct Setting Method:**

Set Hi Alarm: please adjust the Set Knob directly by hand to make the Red Indicator on the graduation of setpoint value what customer requires.

Set Lo Alarm: please push down the Set Knob at the first by hand to make the Green Indicator on the graduation of setpoint value what customer requires.

正確的設定方式:

設定Hi Alarm請直接轉動旋鈕即可。

設定Lo Alarm請將旋鈕向下壓，保持此動作，再轉動旋鈕即可設定。



#### **STEP. 3**

##### **Incorrect Setting Method:**

Please notice that, Do Not move the Red or Green Indicator directly by hand! In order to avoid the incorrect setpoint, and malfunction of setting components.

錯誤的設定方式:

請勿用手直接移動Hi & Lo Alarm設定點指針，以免造成設定點誤差，及設定元件無法與設定指針同步。



#### **STEP. 4**

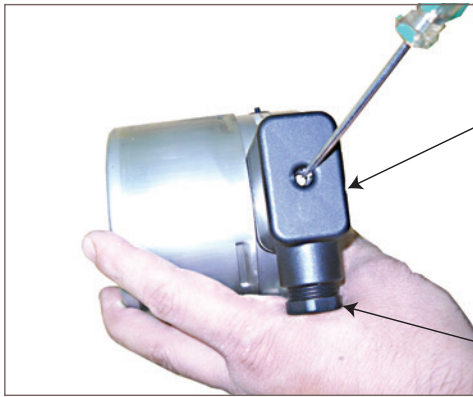
Set up finished, please screw the cover tightly by clockwise to prevent the water penetration.

設定好後，請順時針方向將上蓋鎖緊，以防止水氣進入。



# 4.0 INSTRUCTION- SPDT x 2

## (C) Junction Box of Plug Universal Connector 接線盒:



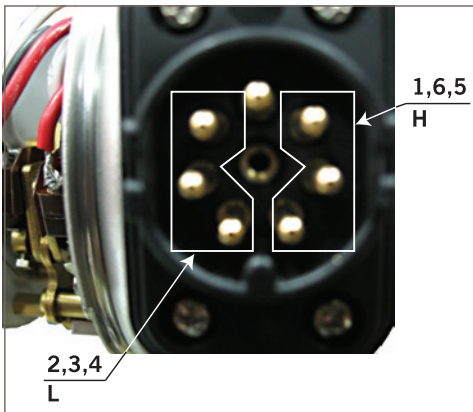
Junction Box  
接線盒

Plug Universal Connector, M20 x 1.5 cable connection  
出線口為M20 x 1.5 cable connection



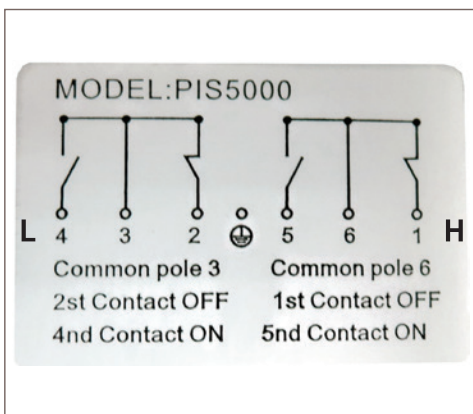
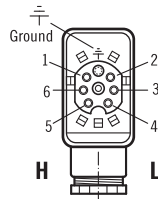
Please loosen the screw on the top by cross-head screwdriver counterclockwise, and take off the junction box cover.

請使用十字螺絲起子將螺絲逆時針鬆開後，再打開接線盒蓋子。

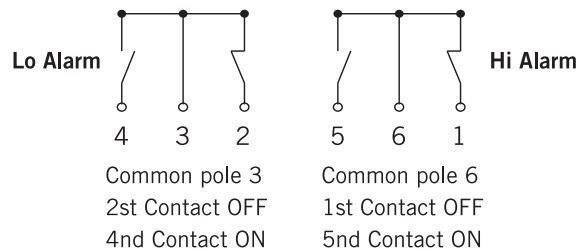


Junction Terminal Board: SPDT x 2

1,6,5 for Hi Alarm  
2,3,4 for Lo Alarm  
SPDT x 2接線組

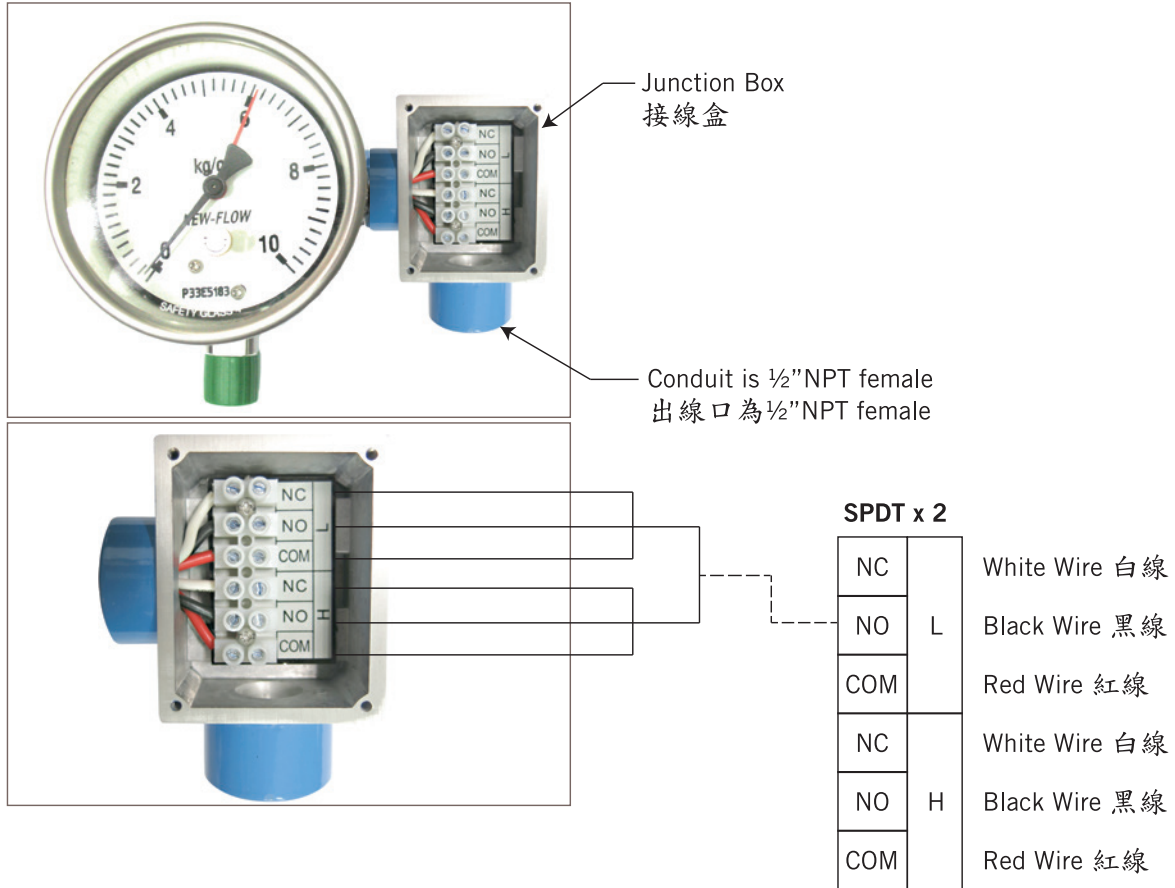


Wiring Drawing: SPDT x 2  
接線圖標示SPDT x 2

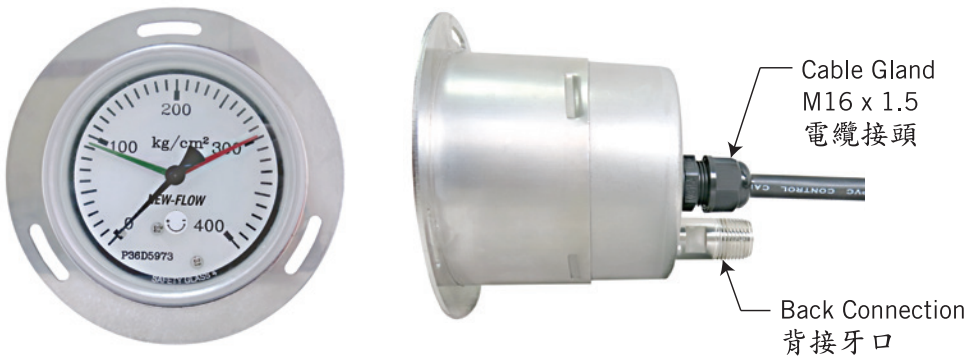


## 4.0 INSTRUCTION- SPDT x 2

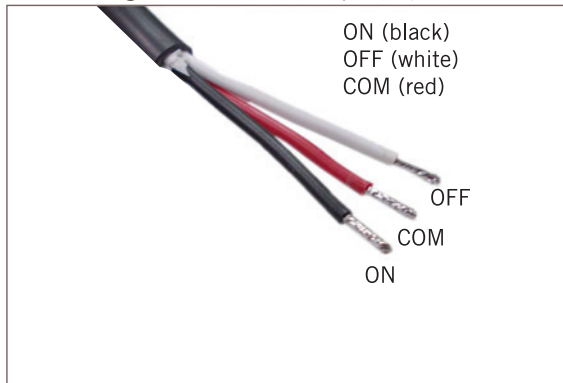
(D) Junction Box of 1/2" NPT Connection 接線盒:



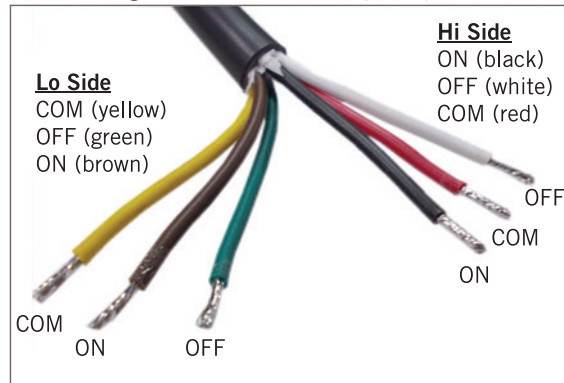
## 5.0 FOR PANEL MOUNTING TYPE



One Setting Point, SPDT x 1 單開關:



Two Setting Points, SPDT x 2 雙開關:



**NOTE.:**

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