

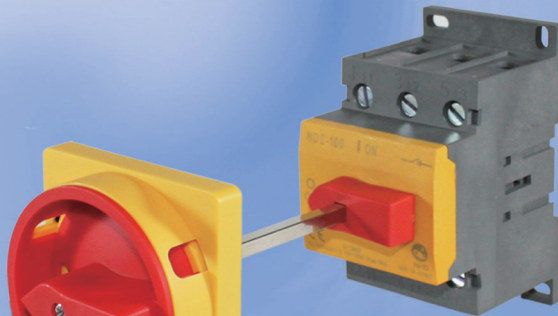
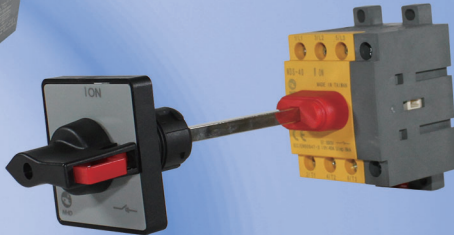


賀電

CAM SWITCHES

NHD

SWITCH DISCONNECTOR



EC Declaration of Conformity

LISTED

A004239

# CAM SWITCHES FEATURES AND CHARACTERISTICS 特性表

接觸阻抗 Contact Resistance	50 mΩ以下 less than 50 mΩ
絕緣阻抗 Insulation Resistance	500V DC電壓下, 100MΩ以上 Over 100MΩ at 500V DC
耐電壓 Dielectric Strength	AC 2500V之測試電壓1分鐘, 無短路, 破壞, 燒毀等異常現象 Test with AC 2500V for one min. without short circuit, breaks, burns or anything unusual.
耐衝擊 Shock Resistance	500 m/s <sup>2</sup>
耐振動 Vibration Resistance	10~55Hz 複振幅0.1mm Total Amplitude 0.1mm, 10~55Hz.
動作頻率 Operation Frequency	1800次/小時 1800 times/ hour
機械壽命 Mechanical Durability	100萬次以上 Over one million times
電氣壽命 Electrical Durability	20萬次以上 Over two hundred thousand times
螺絲扭力 Screw Torque	0.8 N-m保持5秒鐘不得破損 (10~32A) 0.8 N-m for five seconds without any fracture. (10~32A)
螺絲扭力 Screw Torque	5 N-m保持5秒鐘不得破損 (63~100A) 5 N-m for five seconds without any fracture. (63~100A)
保存溫度 Storage Temperature	-20~80°C (-4~176°F)
使用溫度 Operating Temperature	-20~70°C (-4~158°F)
相對溼度 Relative Humidity	45~85% RH
額定絕緣電壓 / 額定電流 Rated Insulation Voltage / Thermal Current	Ui : 600V / Ith : 10 ~ 100A
耐濕性 Humidity- Resistance	在溫度40±2°C (104±35°F), 相對溼度90~100%狀態下, 放置48小時後, 擦乾水滴於5分鐘內測試絕緣體電阻3MΩ以上, 接觸電阻5mΩ以下, 耐電壓亦符合規定, 且無機械故障。 Leave one unit in ambient temprature of 40±2°C (104±35°F) with relative humidity of 90~100% for 48 hours, then dry and test it in 5 minutes. The results have to be: *Insulation Resistance: over 3MΩ *Contact Resistance: less than 5mΩ *Dielectric Strength: fit with its testing standard *No Mechanical failure

**UL** File NO. E325788  **US**  
**LISTED**

USL - Indicates these switches have been evaluated in accordance with the requirements in the Standard for Safety for Industrial Control Equipment, UL 508, Seventeenth Edition.

CNL - Indicates these switches have been evaluated in accordance with the requirements in the Canadian Standard for Industrial Control Equipment, CAN/CSA C22.2 No. 14-05, 10th Edition.

**3C** License NO. 2011010305511917  
GB 14048.5-2008



A004239

**CE** Certificate & Mechanical life

EN 60947-1 : 2007  
EN 60947-3 : 2009



# 多段式切換開關/CAM SWITCHES

型號說明:多段(轉換)開關

Model Designation:Changeover Switches

## NCS-S6C241A101□-B

1      2      3      4      5

標準時不加  
-B白底黑字  
-S銀底黑字

### 1.型式(Type)

S6	Normal Shaft 短柄 (64x64)	S4	Normal Shaft 短柄 (48x48) ★
L6	Long Shaft 長柄 (64x64)	S5	Normal Shaft 短柄 (65x65) ★
O6	Octagonal Shaft 八角柄 (64x64)	L5	Long Shaft 長柄 (65x65) ★

★: 代表有黑色、紅色兩種  
Handle Color: Black、Red

### 2.銘板編號(位置與角度)

Name Plate (Position & Step Angle)	
S6 L6 O6	C241 ~ C844
S5 L5	P241 ~ P741
S4	S261 ~ S846

### 3.容量(Capacity)

A	10A
B	16A
C	25A
D	32A
E	63A
F	80A
G	100A
H	80A+16A 參考P8

### 4.線路圖(Circuit)

101 ~ 803
-----------

### 5.動作(Movement)

空白 none	標準型 Normal
R	復歸型 45° Spring Return 45°

### 新產品系列(New Product)

型號說明:附鎖式多段(轉換)開關

Model Designation:Changeover Switches With Key

## NCS-K2C241A101□□-B

1      2      3      4      5      6

標準時不加  
(紅把手黃色面板)  
-B(黑把手灰色面板)

### 1.型式(Type)

K2	With Key 附鎖(29mm)	G4	Normal Shaft 可附鎖短柄(48x48) ★
K3	With Key 附鎖(34mm)	G5	Circle Shaft 可附鎖圓柄(67x67) ★
K4	With Key 附鎖(48x48)	P5	Circle Shaft 可附鎖圓柄(65x65) ★
K7	With Key 附鎖(76x76)		

★: 代表有黑色、紅色兩種  
Handle Color: Black、Red

### 2.銘板編號(位置與角度)

Name Plate (Position & Step Angle)	
K2 K3	O241 ~ O841
K4 G4	G241 ~ G844
K7	K241 ~ K843
G5 P5	P298

### 3.容量(Capacity)

A ~ H
-------

### 4.線路圖(Circuit)

101 ~ 803
-----------

### 5.動作(Movement)

空白 none	標準型 Normal
R	復歸型 45° Spring Return 45°

### 6.鑰匙抽出位置 (Positions of key removal)

空白 none	標準型 Normal
1 ~ 8 Position	抽出鑰匙 Remove Key

型號說明:電壓、電流切換開關

Model Designation:Voltmeter、Ammeter Switches

## NCS-S6A491AA332

1      2      3      4      5

### 1.型式(Type)

S6	Normal Shaft 短柄 (64x64)	O6	Octagonal Shaft 八角柄 (64x64)
S8	Normal Shaft 短柄 (64x80)	O8	Octagonal Shaft 八角柄 (64x80)
L6	Long Shaft 長柄 (64x64)	O4	Octagonal Shaft 八角柄 (48x48)
L8	Long Shaft 長柄 (64x80)	M6	Normal Shaft 短柄 (48x60)

### 2.銘板編號(位置與角度)

Name Plate (Position & Step Angle)	
A491 ~ A496	
V491 ~ V498	
V741 ~ V742	
V841 ~ V844	
AV843	

### 3.容量(Capacity)

A	10A
B	16A

### 5.比流器(CT)

2	2CT
3	3CT

### 4.線路圖(Circuit)

A33 ~ A34
V33 ~ V36
AV34

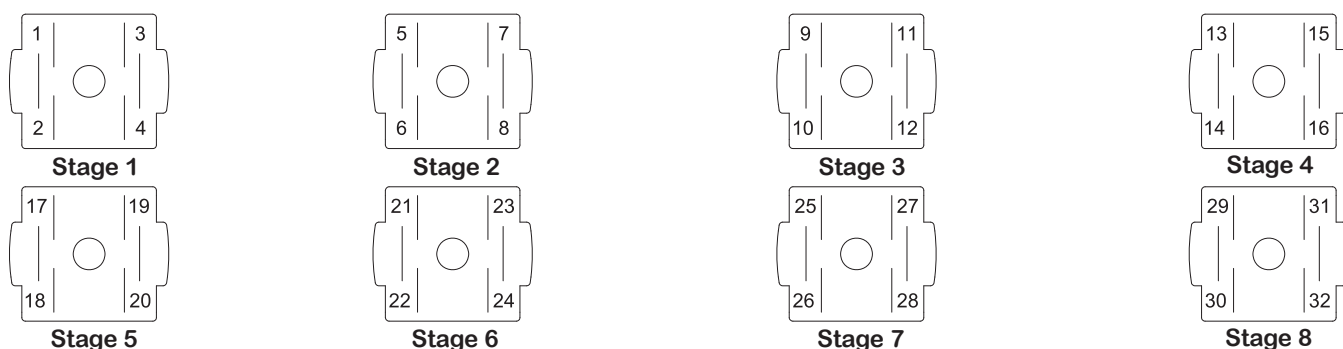
# 多段式切換開關/CAM SWITCHES

容量(Capacity) :

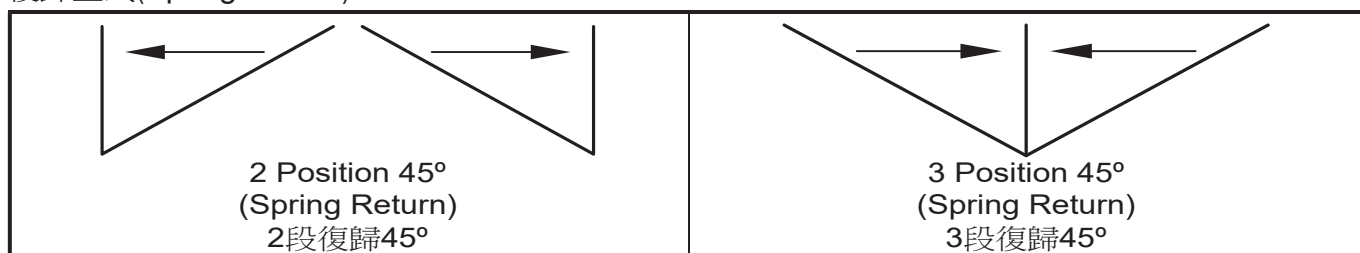
	AC-3 (kw)		AC 21A Iu=Ith	AC-23A (kw)	
	3PH	1PH		3PH	1PH
200~240V	1.5	0.55	10A	1.8	0.75
380~440V	2.2	0.75		3	1.1
660~690V	3	0.75		3	1.1
200~240V	3	1.5	16A	4	2.2
380~440V	5.5	2.2		7.5	3
660~690V	5.5	2.2		7.5	3
200~240V	4	3	25A	5.5	3
380~440V	7.5	3.7		11	5.5
660~690V	7.5	3.7		11	5.5
200~240V	5.5	4	32A	7.5	4
380~440V	11	5.5		15	7.5
660~690V	11	5.5		15	7.5
200~240V	11	-	63A	11	-
380~440V	18.5	-		22	-
660~690V	22	-		30	-
200~240V	15	-	80A	18	-
380~440V	22	-		30	-
660~690V	30	-		37	-
200~240V	30	-	100A	26	-
380~440V	37	-		45	-
660~690V	45	-		55	-

(IEC 60947-3 , EN 60947-4-1)

連接圖(Connecting Diagram) :



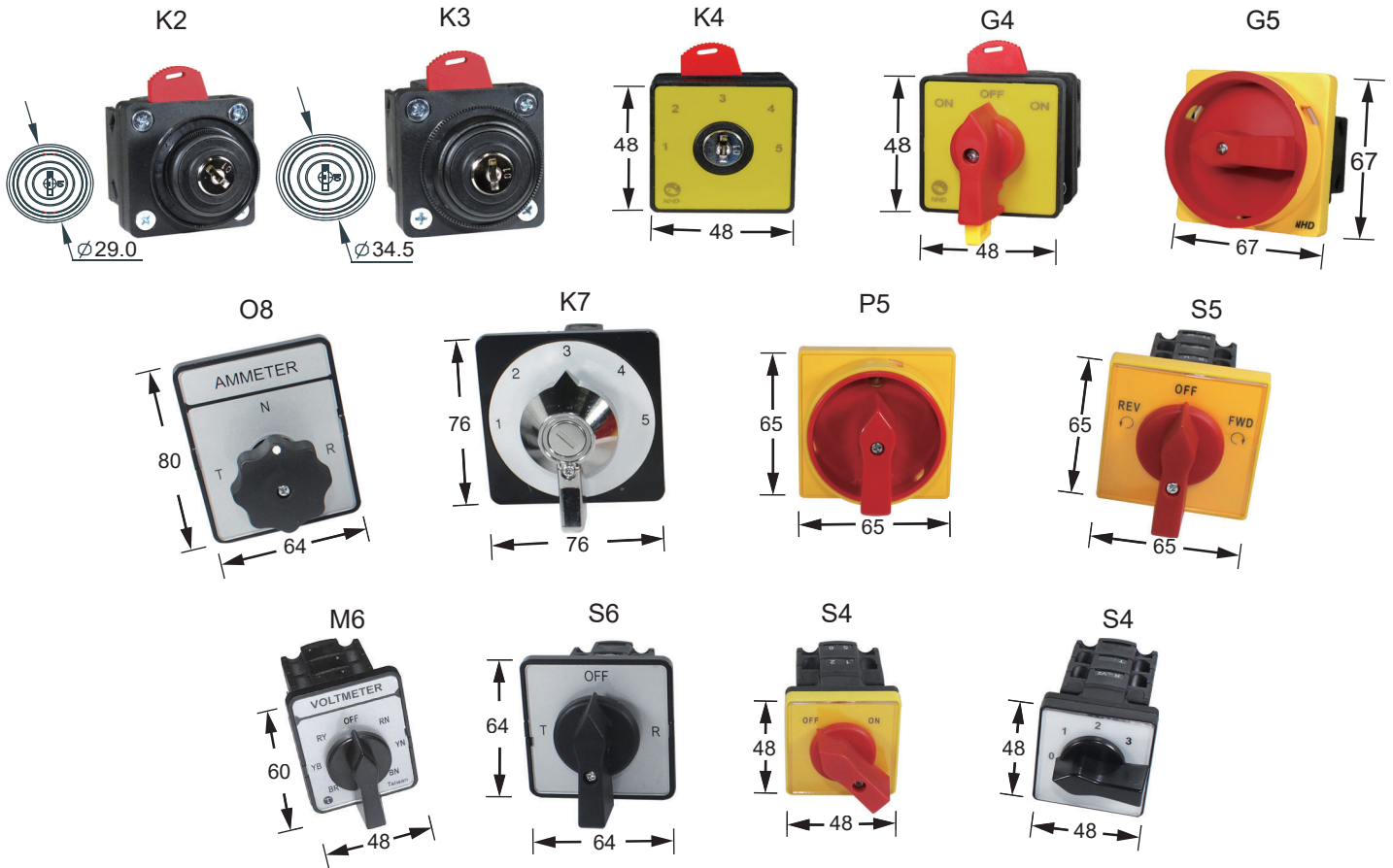
復歸型式(Spring Return) :



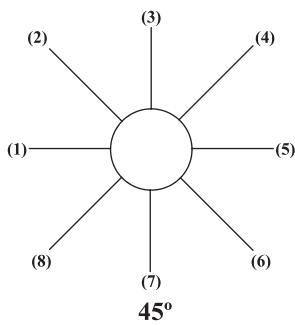
# 多段式切換開關/CAM SWITCHES

面板尺寸(Frame Dimensions) :

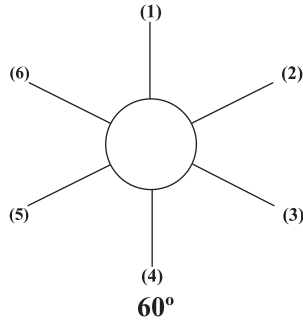
單位(Unit) : (mm)



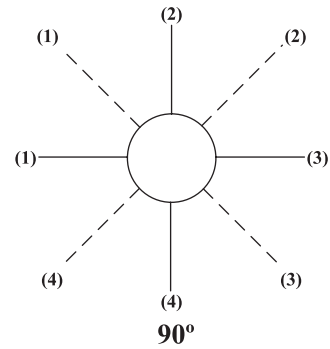
操作位置(Operating Position) :



S4, S5, L5, S6, S8, L6, L8  
O6, O8, K7, M6, K2, K3, K4, G4



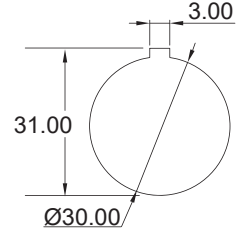
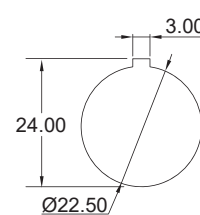
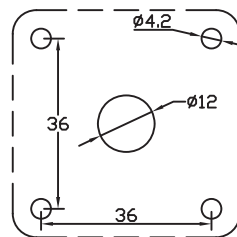
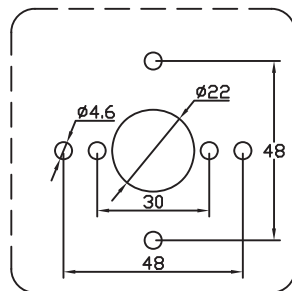
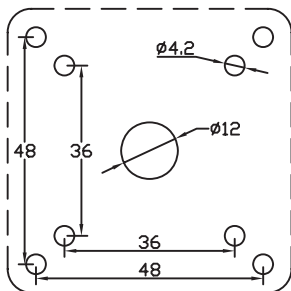
S4, S5, L5



S4, S5, L5, P5, S6, S8, L6, L8  
O6, O8, K7, M6, K2, K3, K4, G4, G5

固定孔尺寸 (Mounting Hole Dimensions) :

單位(Unit) : (mm)



適用型式(For Types):

S6, S8, L6, L8, O6  
O8, S5, L5, P5

K7

S4, M6, O4

K2, K4, G4, G5

K3

# 多段式切換開關/CAM SWITCHES

## 電壓切換開關/Voltmeter Switches:

容量/Capacity:10~32A

<p>V493      V492</p>	<p>V33 3Ø3W</p> <p>OFF RS ST TR</p>	<p><b>( 64*64 mm )</b></p> <p>NCS-S6 (短柄 Normal Shaft)</p>
<p>V496      V495</p>	<p>V34 3Ø4W</p> <p>RN RS ST TR</p>	<p>NCS-L6 (長柄 Long Shaft)</p> <p>NCS-O6 (八角柄 Octagonal Shaft)</p> <p><b>( 64*80 mm )</b></p>
<p>V843      V842</p>	<p>V35 3Ø3W/3Ø4W</p> <p>OFF RN SN TN OFF RS ST TR</p>	<p>NCS-S8 (短柄 Normal Shaft)</p> <p>NCS-L8 (長柄 Long Shaft)</p> <p>NCS-O8 (八角柄 Octagonal Shaft)</p>
<p>V741</p>	<p>V36 3Ø3W/3Ø4W</p> <p>TR ST RS OFF RN SN TN</p>	<p><b>( 48*60 mm )</b></p> <p>NCS-M6 (短柄 Normal Shaft)</p>

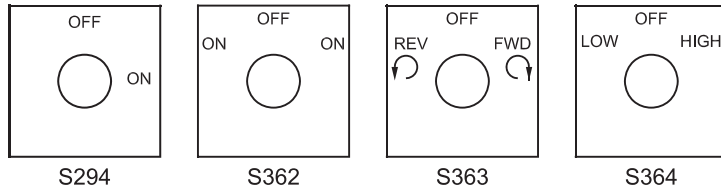
## 電流切換開關/Ammeter Switches:

容量/Capacity:10~32A

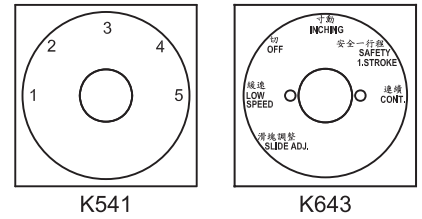
<p>A493      A492</p>	<p>A33 3Ø3W/2CT</p> <p>OFF R S T</p> <p>A33 3Ø3W/3CT</p> <p>OFF R S T</p>	<p><b>( 64*64 mm )</b></p> <p>NCS-S6 (短柄 Normal Shaft)</p> <p>NCS-L6 (長柄 Long Shaft)</p> <p>NCS-O6 (八角柄 Octagonal Shaft)</p> <p><b>( 64*80 mm )</b></p> <p>NCS-S8 (短柄 Normal Shaft)</p> <p>NCS-L8 (長柄 Long Shaft)</p>
<p>A496      A495</p>	<p>A34 3Ø4W/3CT</p> <p>N R S T</p>	<p>NCS-O8 (八角柄 Octagonal Shaft)</p> <p><b>( 48*60 mm )</b></p> <p>NCS-M6 (短柄 Normal Shaft)</p>

# 多段式切換開關/CAM SWITCHES

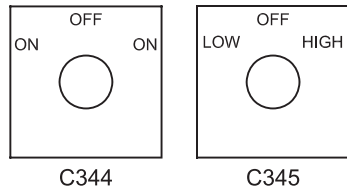
銘板編號(Name Plate No.) : **NCS-S4S294** 48x48mm



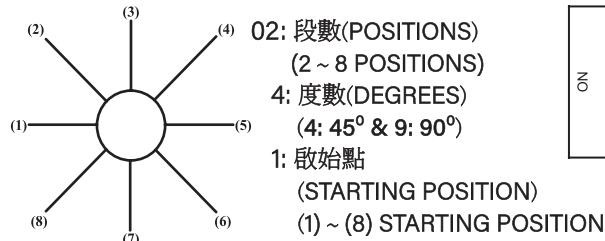
**NCS-K7K541** 76x76mm



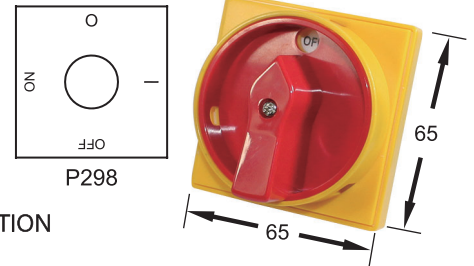
**NCS-S6C344** 64x64mm



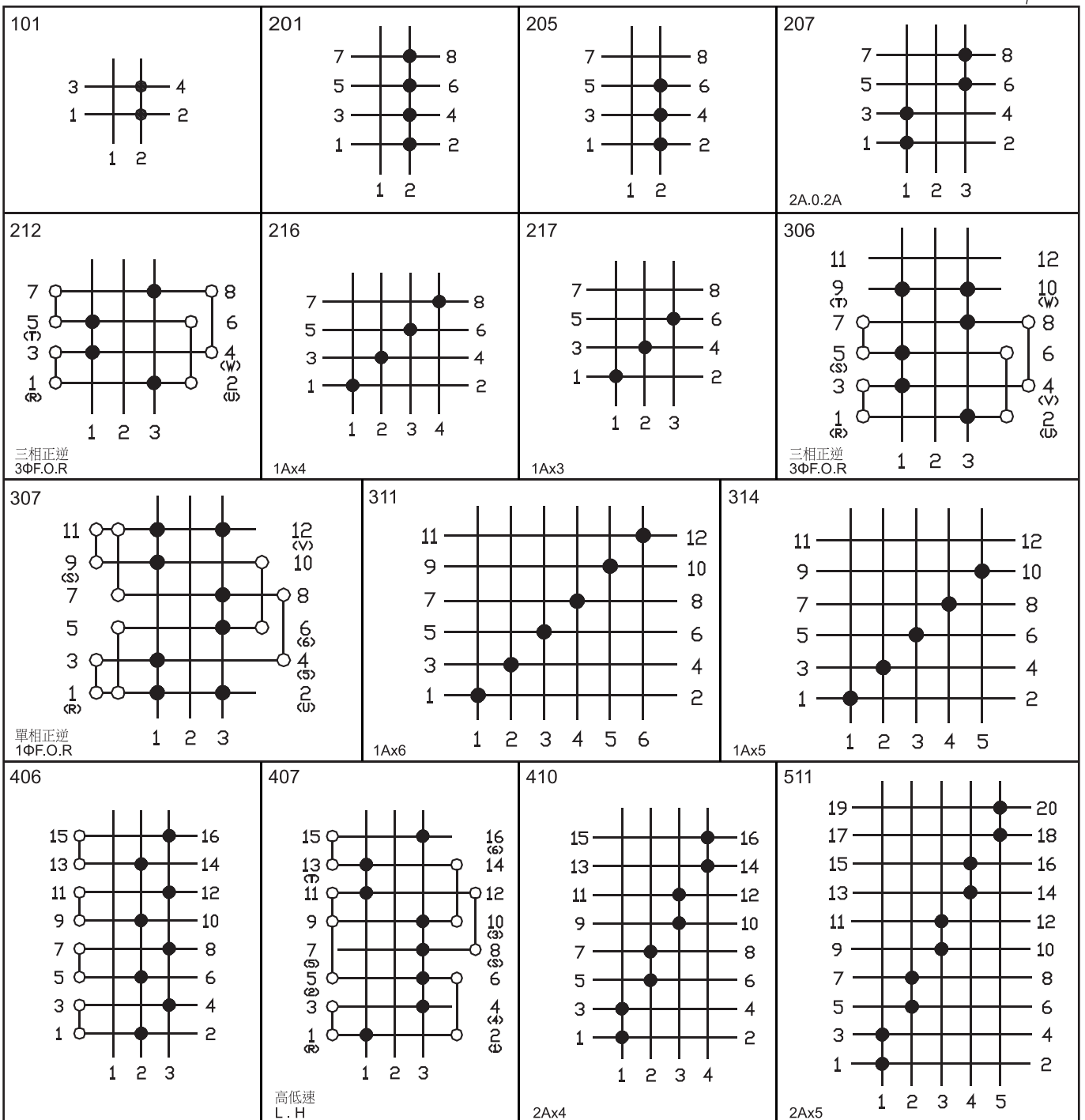
**NCS-K2(K3)0241**



**NCS-P5P298**



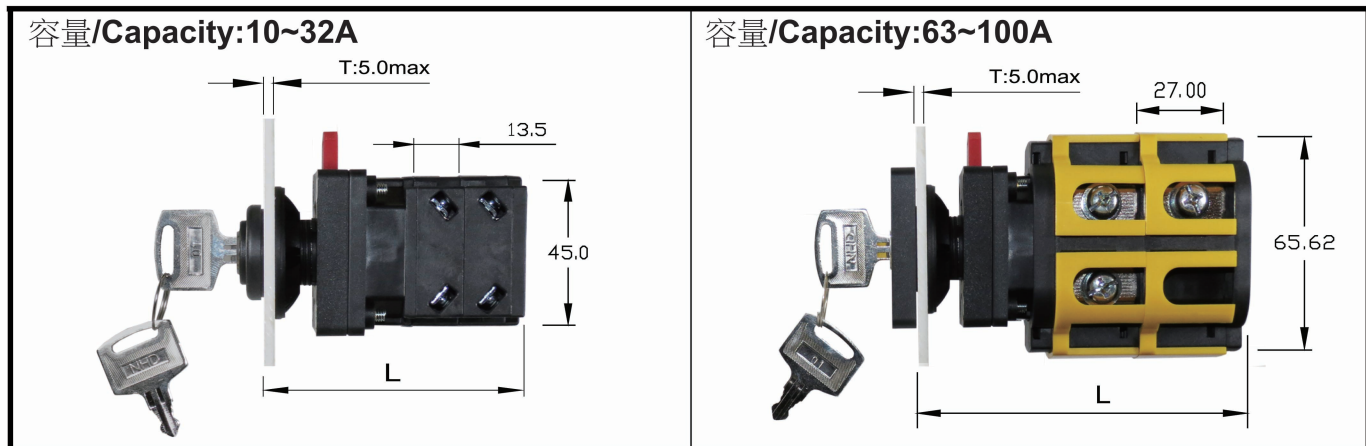
## 線路圖(Circuit Diagram)



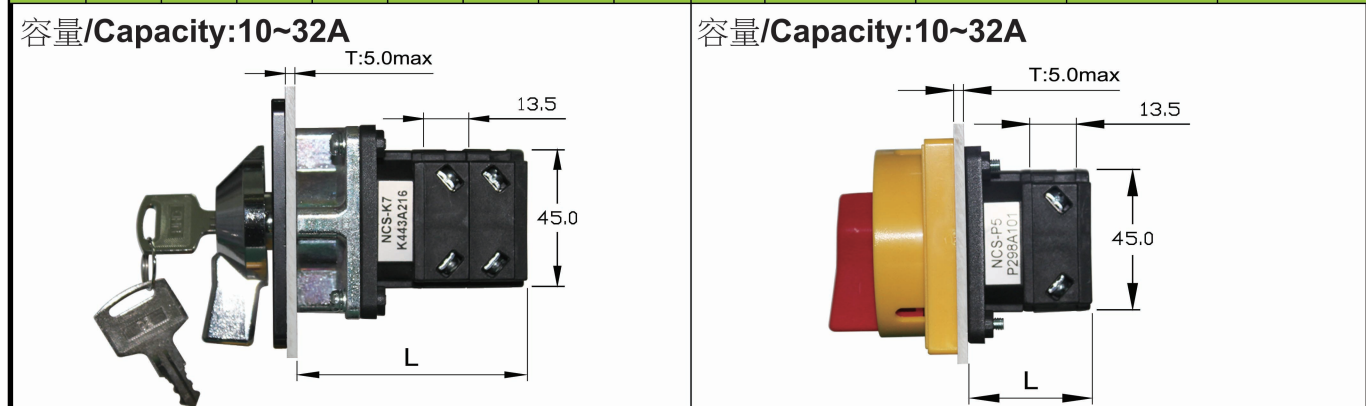
# 多段式切換開關/CAM SWITCHES

外觀尺寸(Dimensions) :

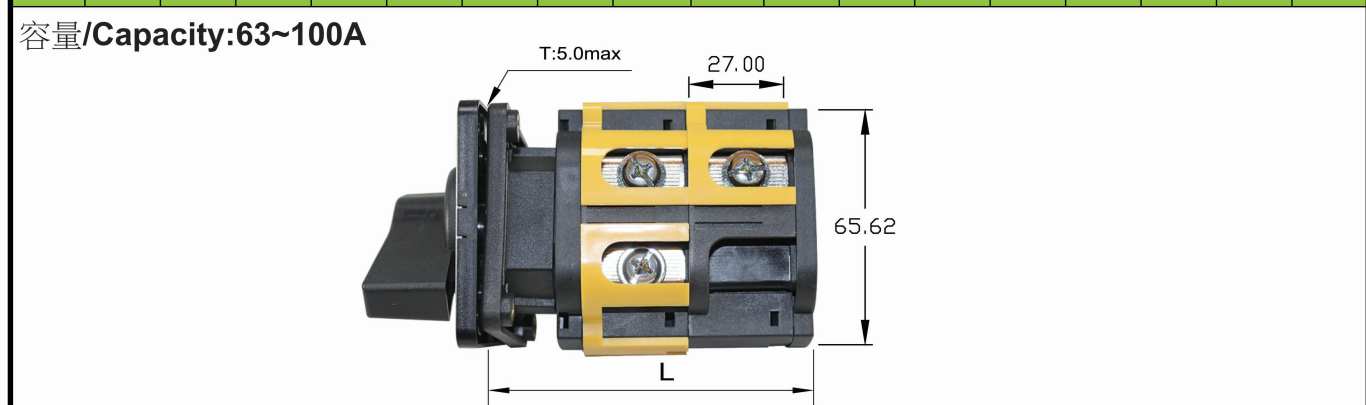
Unit (單位) : mm



層數 Stage	1	2	3	4	5	6	7	8	層數 Stage	1	2	3	4
長度 L	60.5	74	87.5	101	114.5	128	141.5	155	長度 L	77	104	131	158

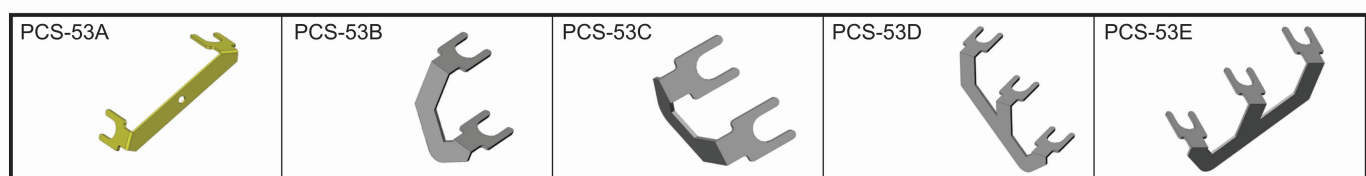


層數 Stage	1	2	3	4	5	6	7	8	層數 Stage	1	2	3	4	5	6	7	8
長度 L	55.5	69	82.5	96	109.5	123	146.5	160	長度 L	37	50.5	64	77.5	91	104.5	118	131.5



層數 Stage	1	2	3	4
長度 L	51.5	78.5	105.5	132.5

附件 (Accessories) :

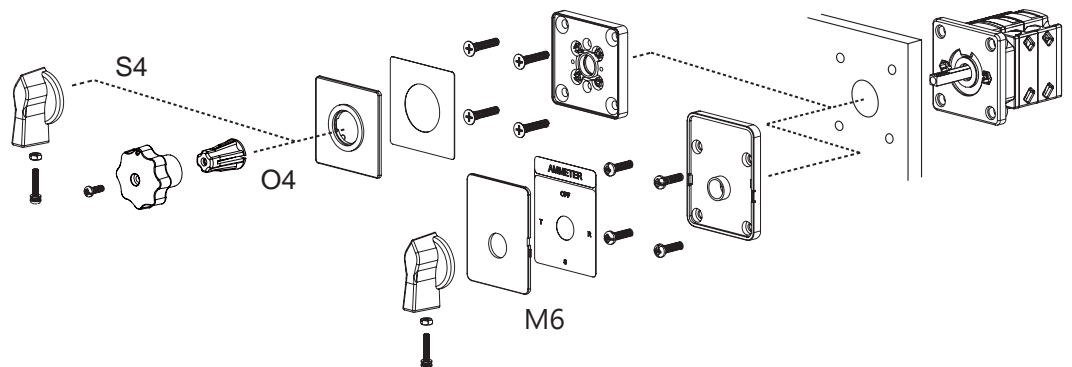
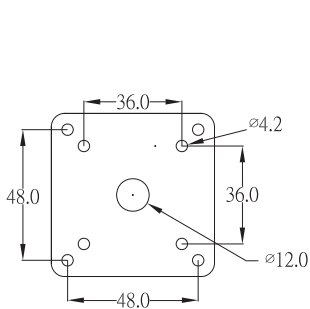
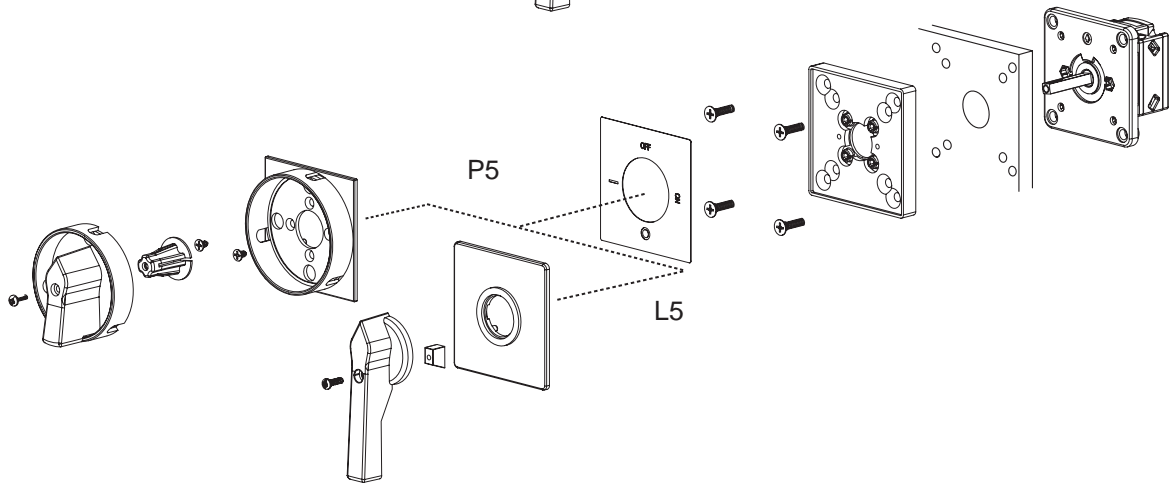
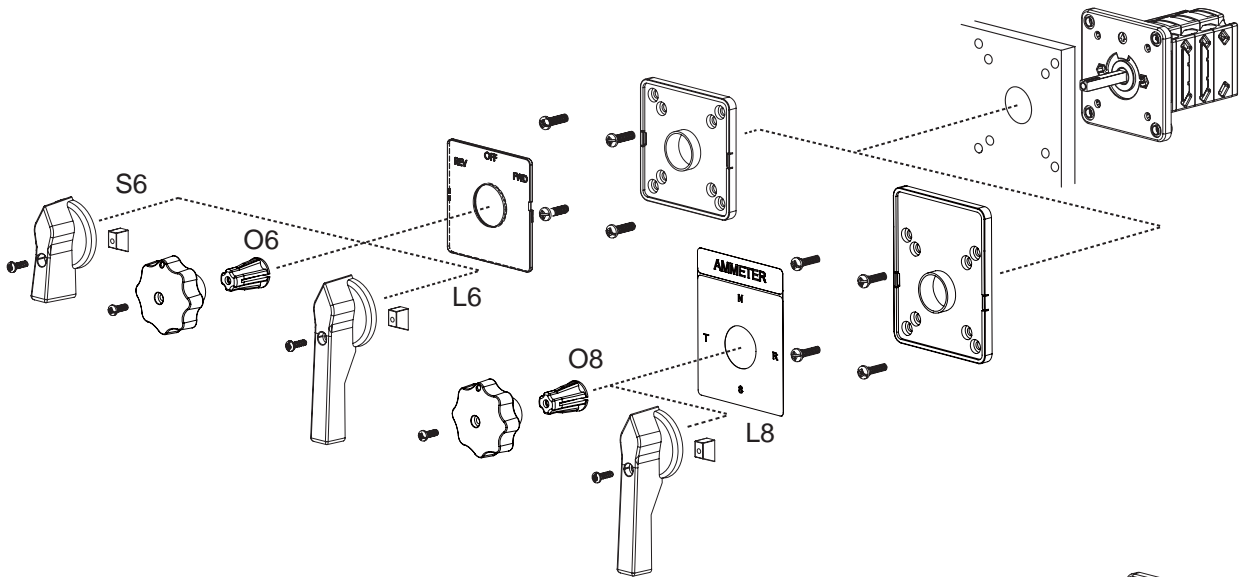
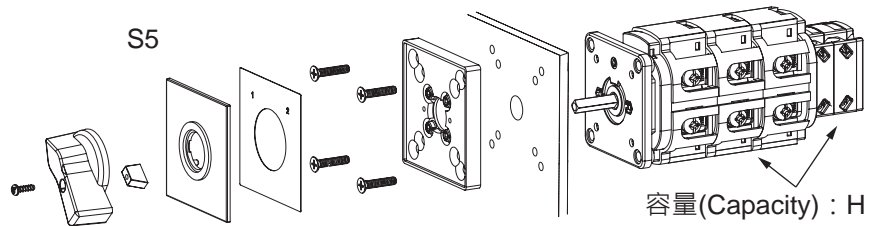
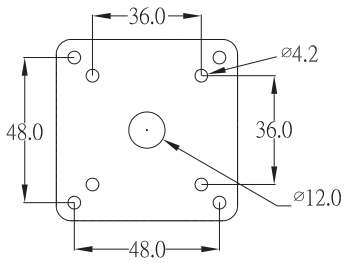




# 多段式切換開關/CAM SWITCHES

安裝方式：  
Mounting / Construction

單位(Unit) : (mm)

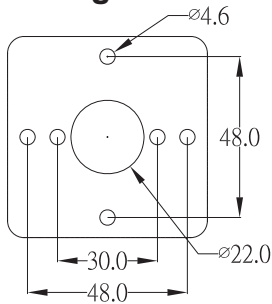


# 多段式切換開關/CAM SWITCHES

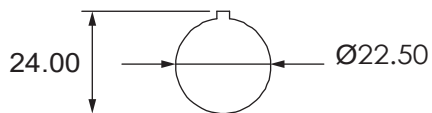
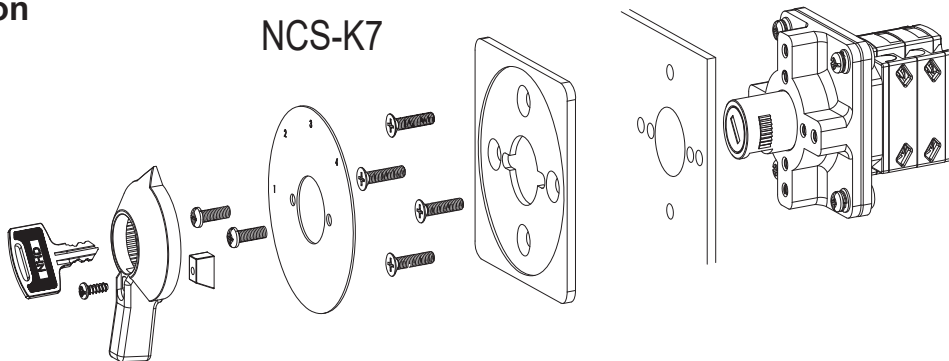
安裝方式：

單位(Unit) : (mm)

## Mounting / Construction



NCS-K7

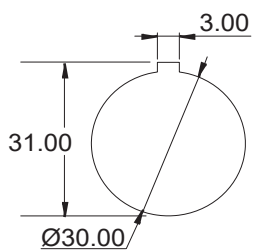
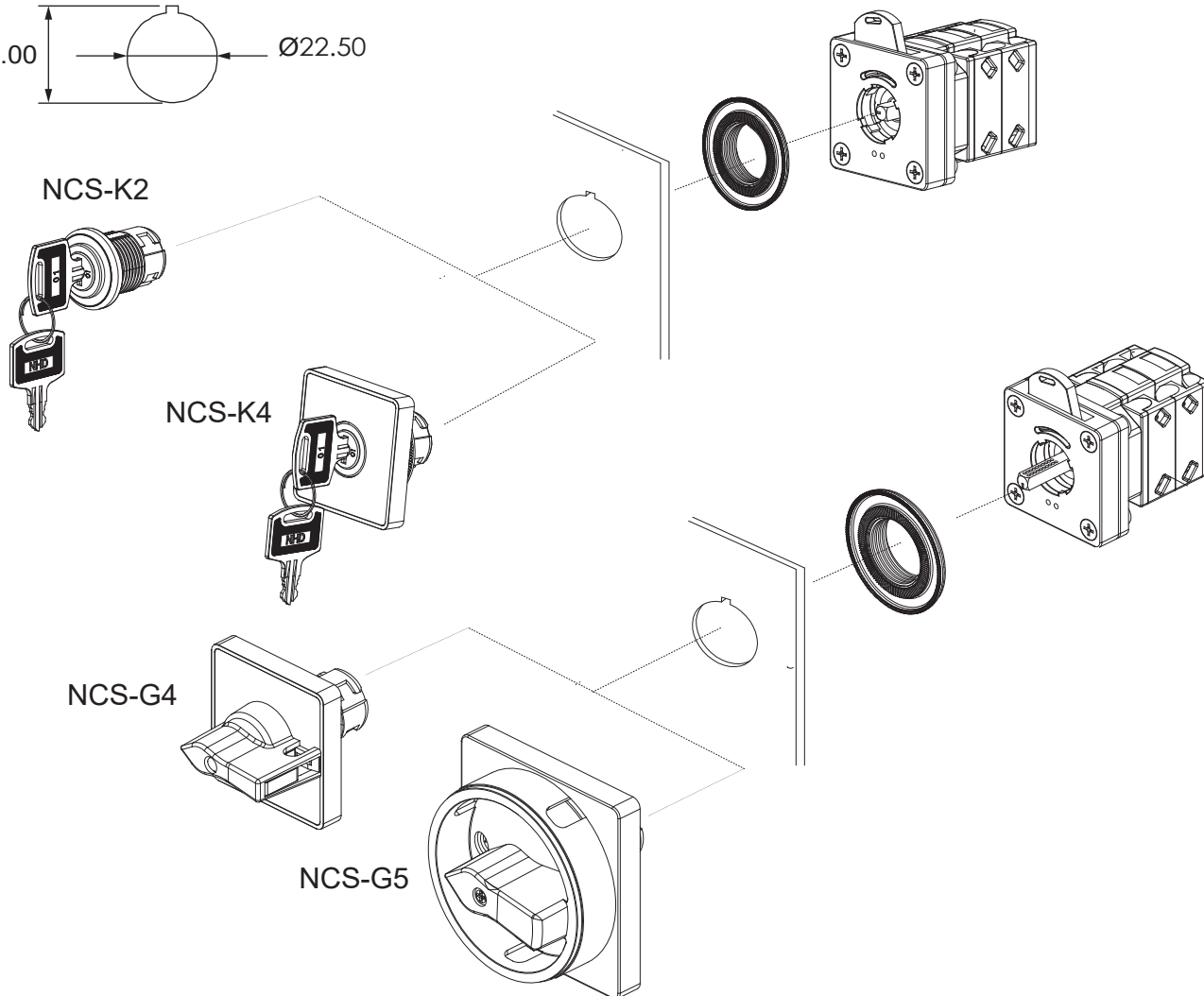


NCS-K2

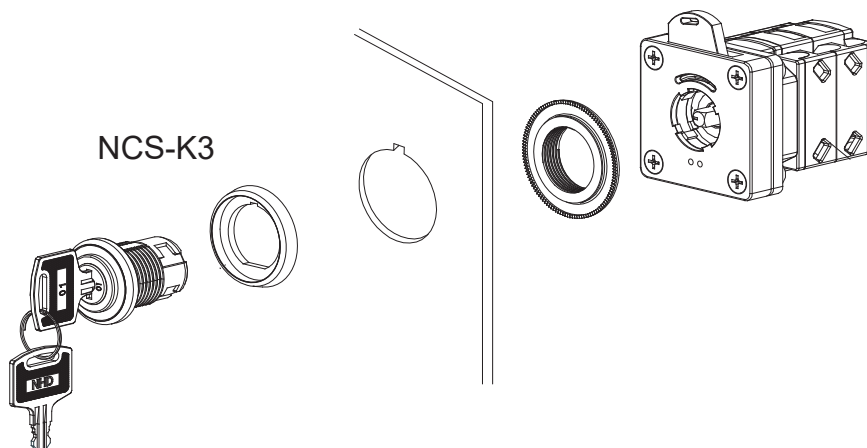
NCS-K4

NCS-G4

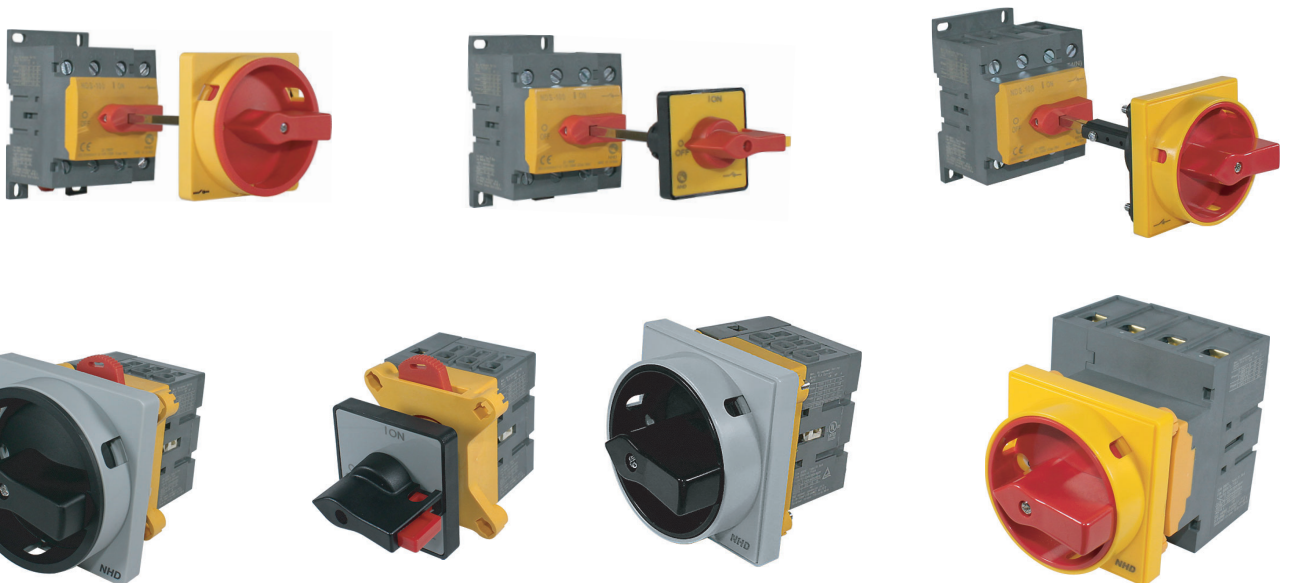
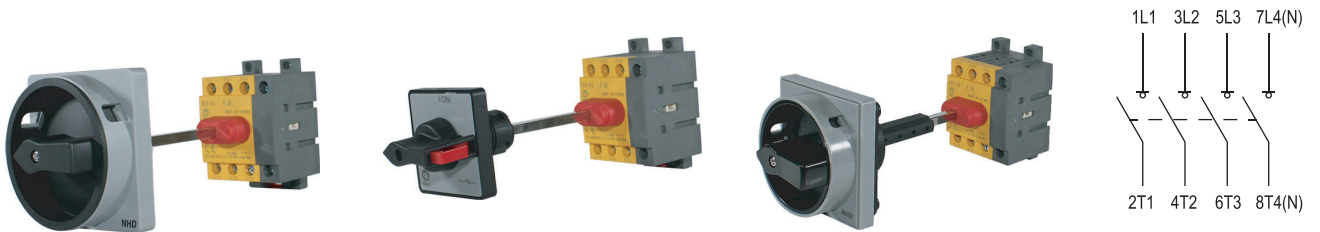
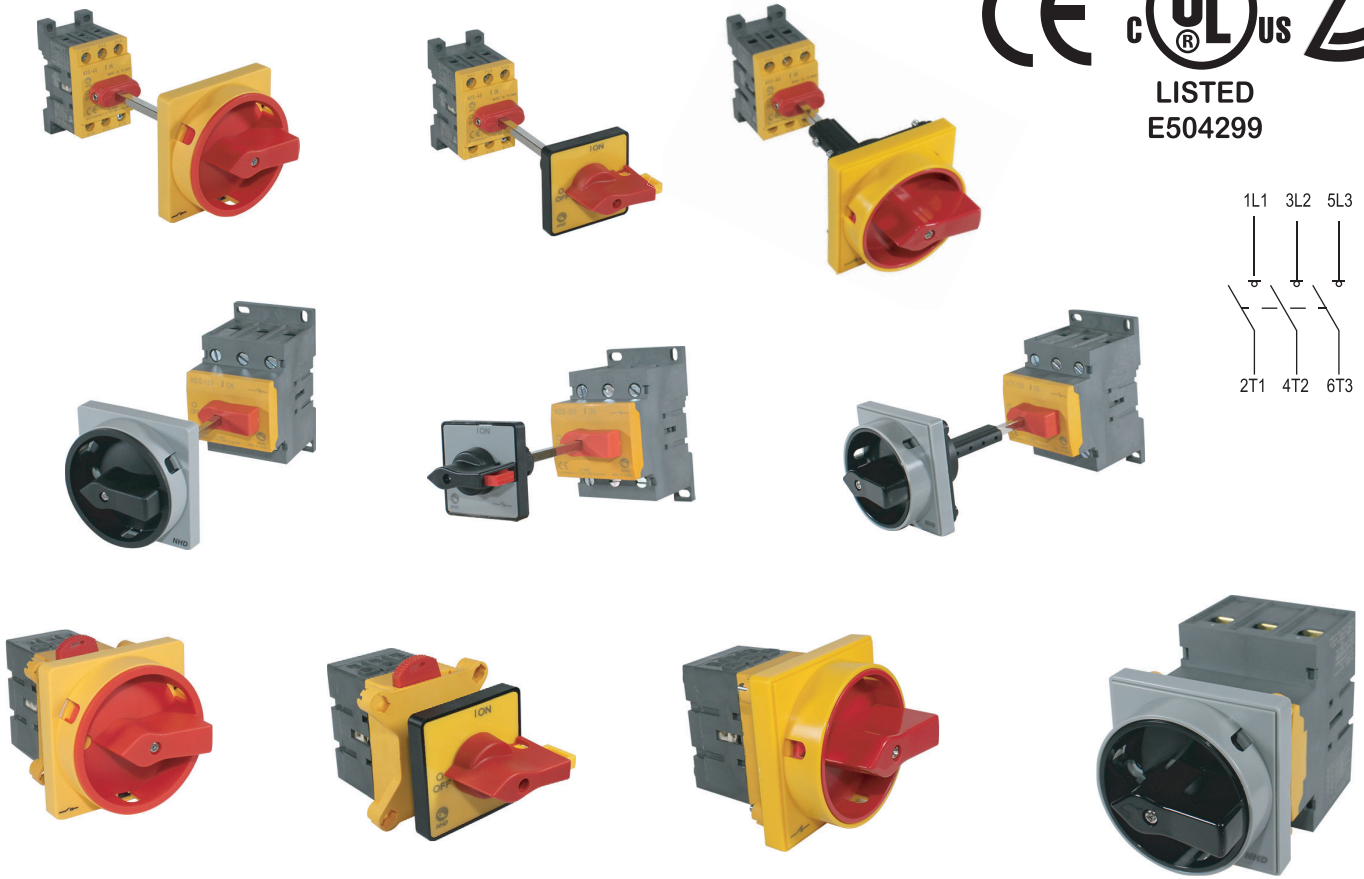
NCS-G5



NCS-K3



# 隔離開關/SWITCH DISCONNECTOR (ISOLATOR)



# 隔離開關/SWITCH DISCONNECTOR (ISOLATOR)

型號說明：  
Model Designation



# NDS-40 3P5DL1-B

1 2 3 4 5 6

1.容量(Capacity) 3.型式(Type)

20	25A
30	32A
40	40A
60	63A
80	80A
100	100A

G5	Padlockable Handle with Φ22 Hole 可附鎖圓柄 (67x67mm)
G4	Padlockable Handle with Φ22 Hole 可附鎖短柄 (48x48mm)
P5	Padlockable Handle with Screw Fix 可附鎖圓柄 (65x65mm)

5.四方柱長度(mm)  
Shaft Length (mm)

L1	150
L2	200
L3	300
BX	Yellow Cover Black Base 黃蓋黑下座
AX	Gray Cover Black Base 灰蓋黑下座

2.極數(Poles)

3	3 Pole
4	4 Pole (3P+N)

4.安裝方式 (Mounting / Construction)

D	Base and DIN-rail mounting, front operated 底板和鋁軌安裝
P	Panel mounting (Door mounting) 面板式安裝

6.顏色(Color)

None	Red Handle 紅色手柄
B	Black Handle 黑色手柄

規格(Specification) :

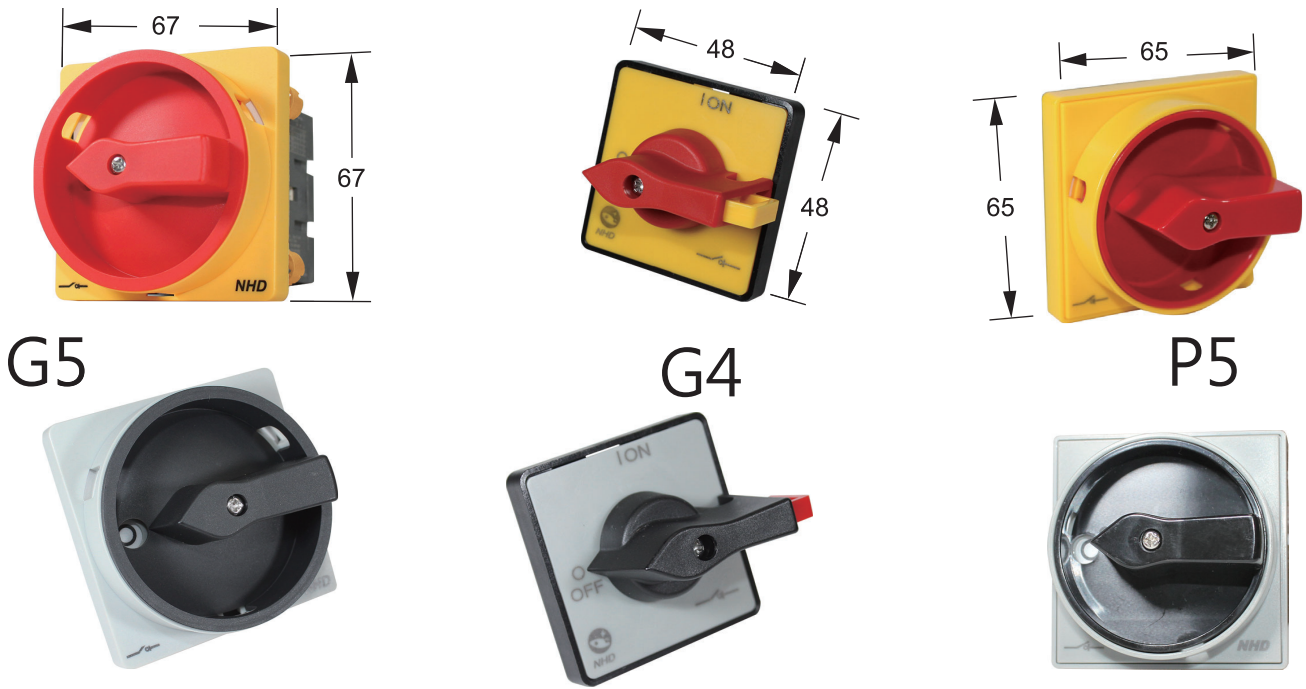
\* NDS-60.80.100 Gray Box Only  
NDS-60.80.100 塑膠盒為灰色

	Unit	Switch type												
		NDS-20			NDS-30			NDS-40						
絕緣耐壓 Insulation and Operation Voltage (Ui)	V	690												
連續電流 Rated Thermal Current (Ith)	A	25			32			40						
AC3 Max. horsepower rating/ motor FLA current	Three phase	220~240V	KW	HP	A	3.7	5	15.2	5.5	7.5	22	7.5	10	28
		380~440V	KW	HP	A	7.5	10	14	11	15	21	15	20	27
	660~690V	KW	HP	A	7.5	10	11	15	20	22	15	20	22	
	Single phase	120V	KW	HP	A	0.75	1	16	1	1.5	20	1.5	2	24
240V		KW	HP	A	1.5	2	12	2.2	3	17	3.7	5	28	
Rated operational current, AC-21A		A			16			25			40			
Rated operational current, AC-23A	220~240V	A			16			20			23			
	380~440V	A			16			20			23			
	660~690V	A			10			11			15			
介電強度 Dielectric strength	50Hz 1min.	kV			6			6			6			
額定耐衝擊電壓 Impulse Withstand		kV			8			8			8			
工作環境溫度 Operating Temperature	°C			-20~+80										
工作環境濕度 Operating Humidity	%			48~+90										
最高海拔 Maximum Elavation	m			2000										
接觸電阻 Contact Resistance	mΩ			50										
絕緣電阻 Insulation Resistance	MΩ			500Vdc / 100MΩ										
切換速度 Switching Speed	ms			0.3										
線徑 Cable Cross Section (Cu)	AWG/mm <sup>2</sup>			integrated 18-8 (0.75~10mm <sup>2</sup> )										
螺絲扭力 Screw Tightening Torque	lb.in/Nm			7/0.8										
耐震動 Vibration Resistance				50Hz /0.1mm										
耐衝擊 Impact Resistance				>10G										
端子型式 Terminal Type				歐端/裸銅 Tongues / Stripped Wire										
防護等級 IP Rating				IP20										
面板防護等級 Panel IP Rating	IP			NEMA 4X(IP66) : G4、G5(UL) IP66 : P5										

# 隔離開關/SWITCH DISCONNECTOR (ISOLATOR)

面板尺寸(Frame Dimensions) :

單位(Unit) : (mm)



規格(Specification) :

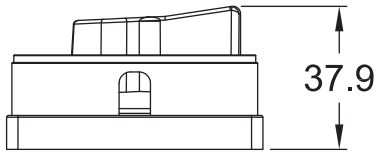
			Unit			Switch type								
						NDS-60			NDS-80			NDS-100		
絕緣耐壓 Insulation and Operation Voltage (Ui)			V			690			690			690		
連續電流 Rated Thermal Current (Ith)			A			63			80			100		
AC3 Max. horsepower rating/ motor FLA current	Three phase	220~240V	KW	HP	A	11	15	42	15	20	54	18	25	68
		380~440V	KW	HP	A	22	30	42	30	40	52	30	40	52
		660~690V	KW	HP	A	22	30	32	30	40	41	30	40	41
	Single phase	120V	KW	HP	A	1.5	2	24	1.5	2	24	2.2	3	34
		240V	KW	HP	A	5.5	7.5	40	7.5	10	50	7.5	10	50
Rated operational current, AC-21A			A			63			80			100		
Rated operational current, AC-23A			A			45			75			80		
						45			65			65		
						20			20			40		
介電強度 Dielectric strength			50Hz 1min.			kV			6			6		
額定耐衝擊電壓 Impulse Withstand						kV			8			8		
工作環境溫度 Operating Temperature			°C			-20~+80								
工作環境濕度 Operating Humidity			%			48~+90								
最高海拔 Maximum Elavation			m			2000								
接觸電阻 Contact Resistance			mΩ			50								
絕緣電阻 Insulation Resistance			MΩ			500Vdc / 100MΩ								
切換速度 Switching Speed			ms			0.3								
線徑 Cable Cross Section (Cu)			AWG/mm <sup>2</sup>			integrated 14-2 (2-30mm <sup>2</sup> )								
螺絲扭力 Tightening Torque			lb.in/Nm			25 / 2.8								
耐震動 Vibration Resistance						50Hz /0.1mm								
耐衝擊 Impact Resistance						>10G								
端子型式 Terminal Type						歐端/裸銅 Tongues / Stripped Wire								
防護等級 IP Rating						IP20								
面板防護等級 Panel IP Rating			IP			NEMA 4X(IP66) : G4、G5(UL) IP66 : P5								

# 隔離開關/SWITCH DISCONNECTOR(ISOLATOR)

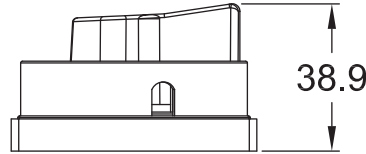
尺寸：  
Dimensions

單位(Unit): (mm)

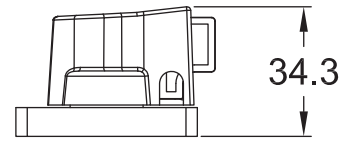
G5



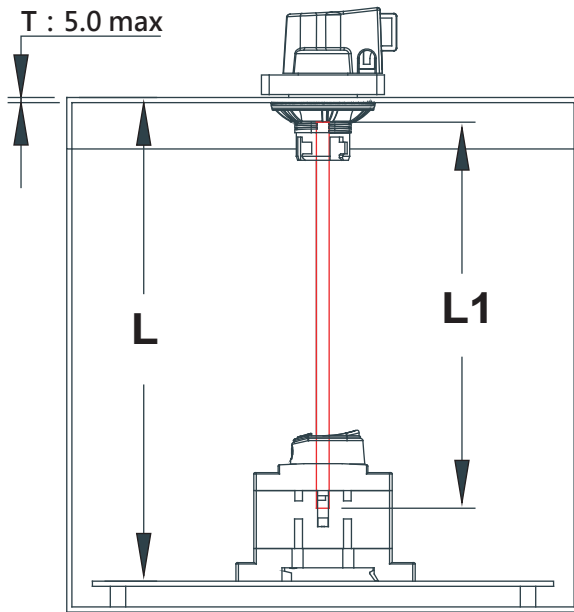
P5



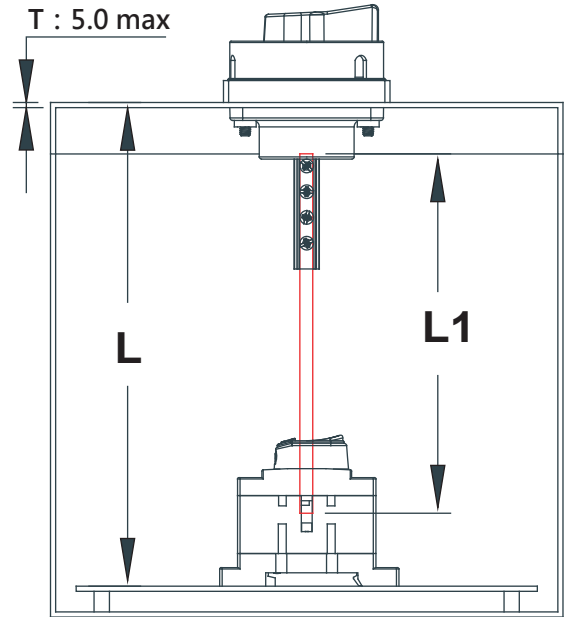
G4



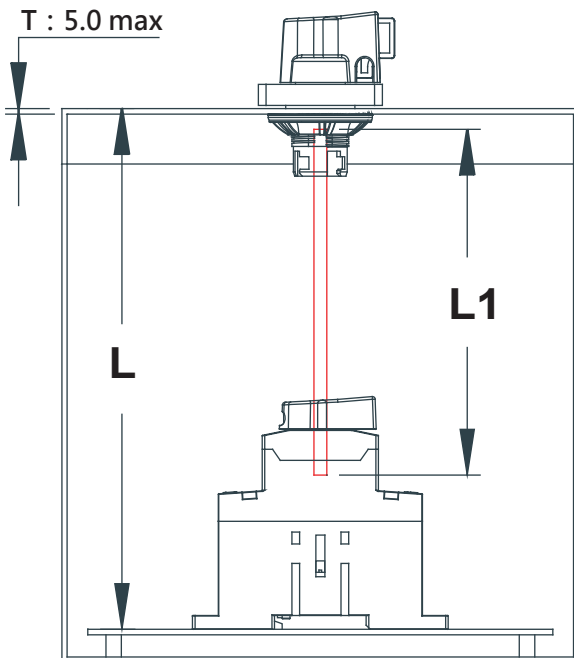
NDS-40+G4(G5)



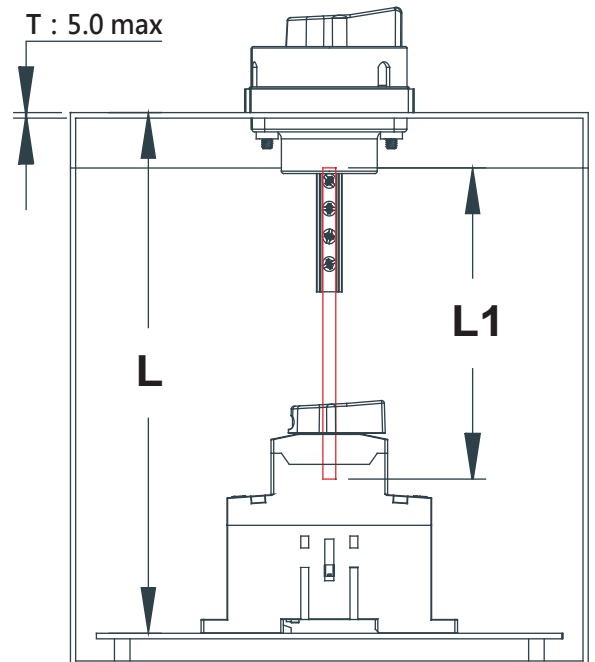
NDS-40+P5



NDS-100+G4(G5)



NDS-100+P5



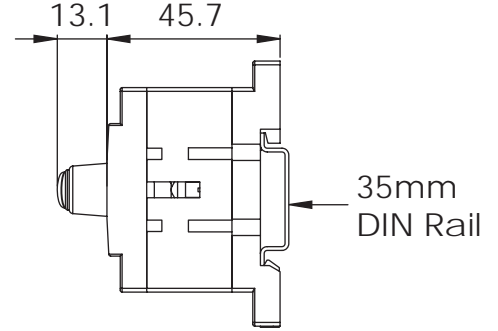
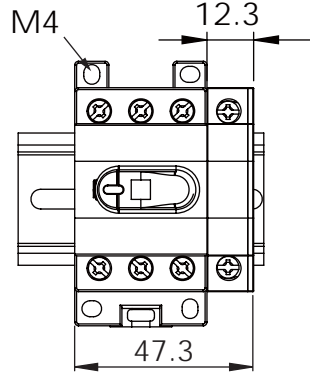
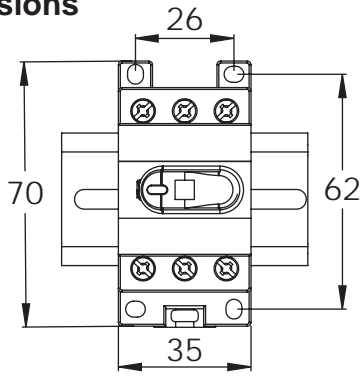
適用箱體深度(mm)=L Applicable Case Depth (mm)=L	NDS-40+G4(G5)	NDS-40+P5	NDS-100+G4(G5)	NDS-100+P5
四方柱長度(mm) = L1 Rotary Shaft Length (mm) = L 1	L - 38 = L1	L - 48 = L1	L - 63 = L1	L - 75.5 = L1

# 隔離開關/SWITCH DISCONNECTOR (ISOLATOR)

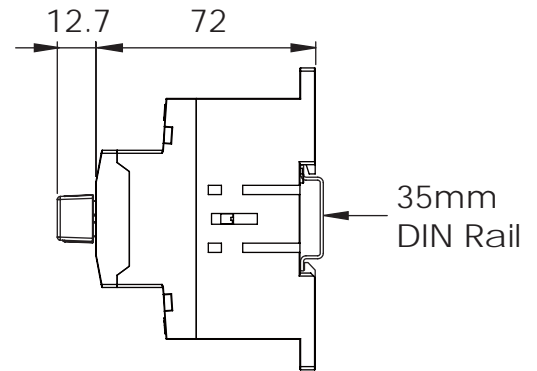
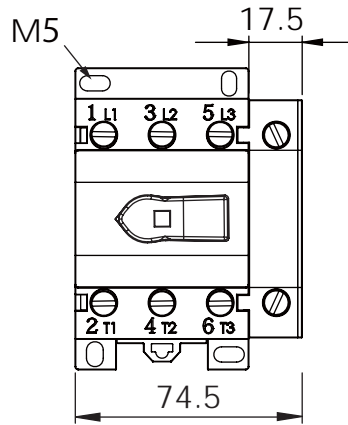
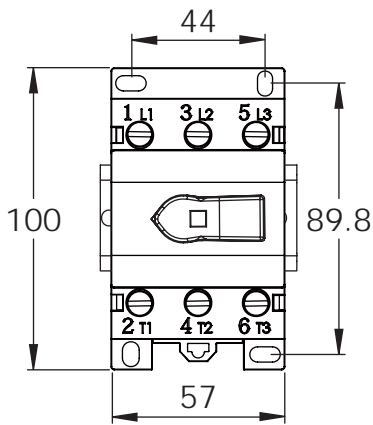
尺寸：

單位(Unit)：(mm)

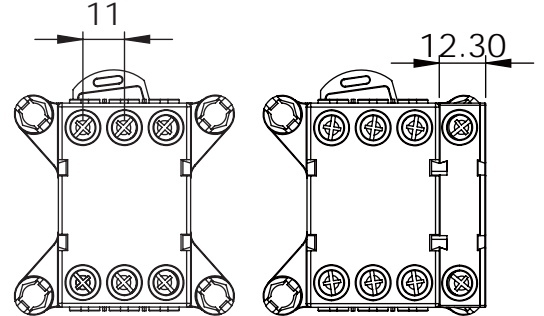
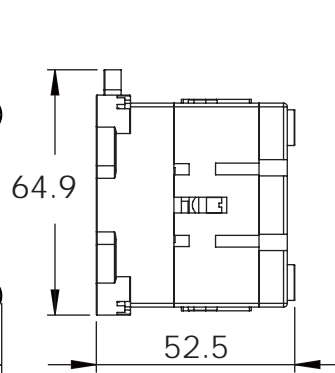
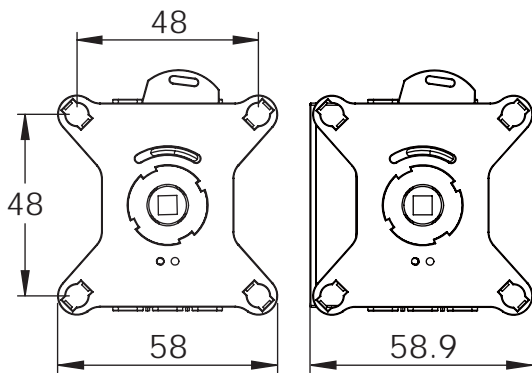
## Dimensions



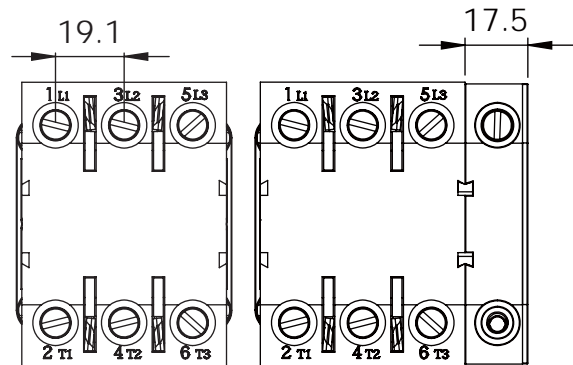
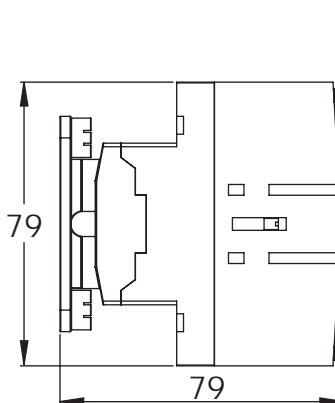
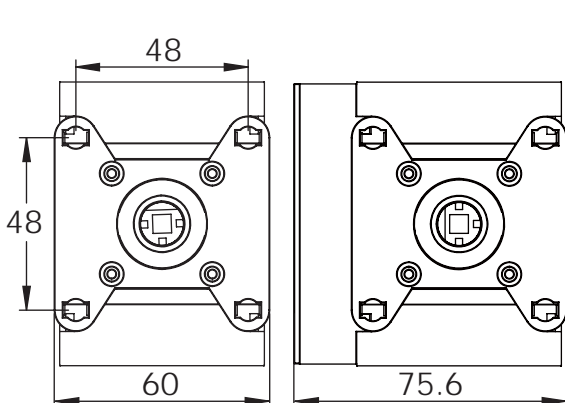
( NDS-20D~NDS-40D ) 十字螺絲 PHILLIPS/SLOT.



( NDS-60D~NDS-100D ) 一字螺絲 SLOTTED



( NDS-20P~NDS-40P ) 十字螺絲 PHILLIPS/SLOT.



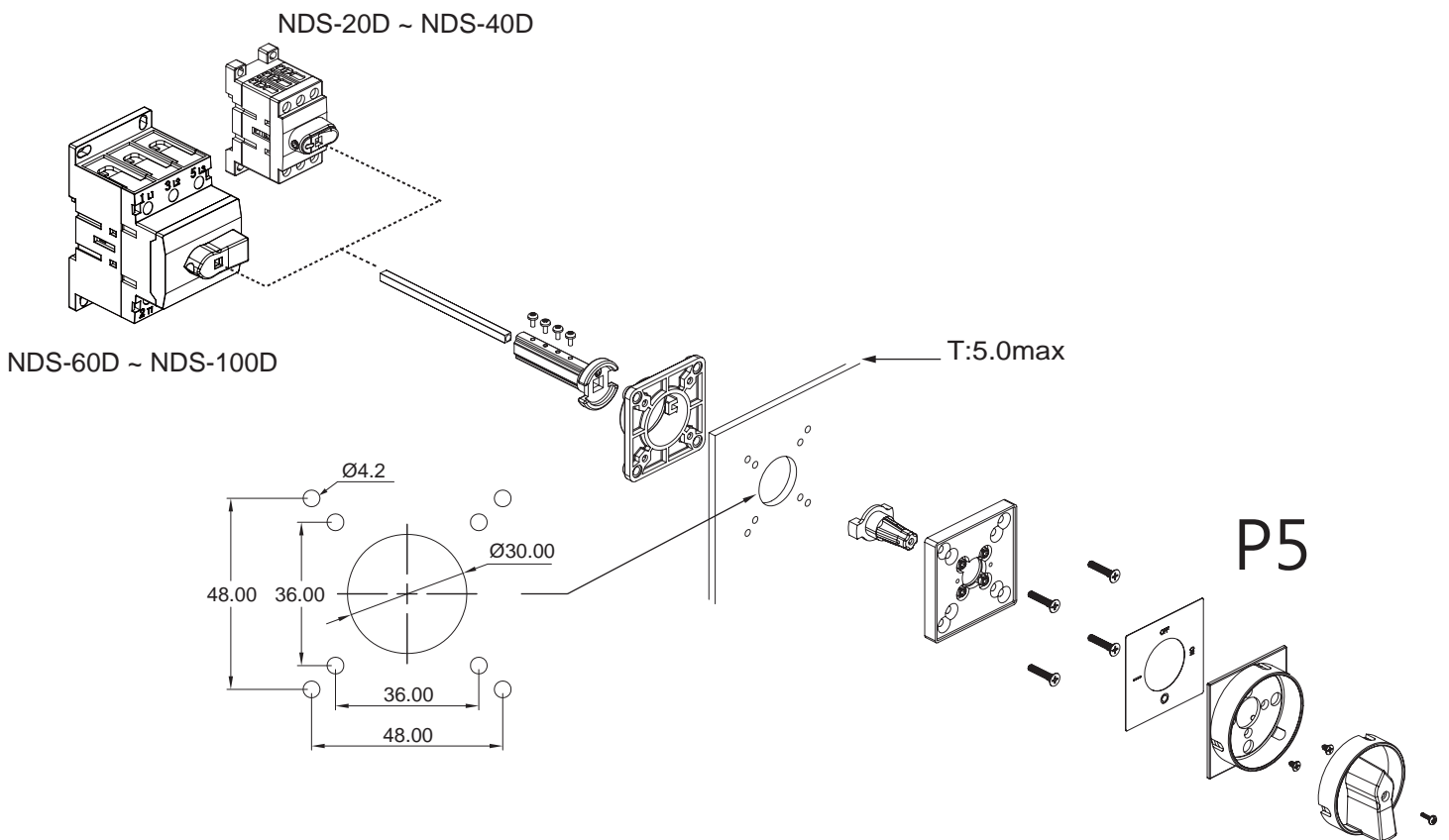
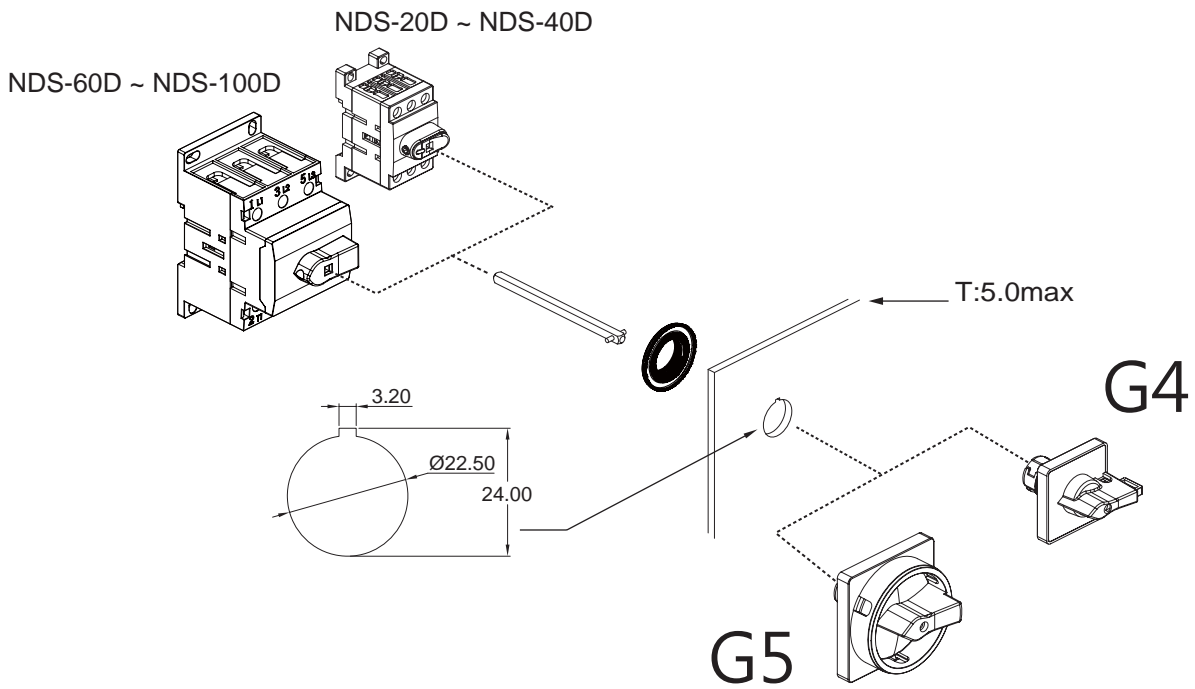
( NDS-60P~NDS-100P ) 一字螺絲 SLOTTED

# 隔離開關/SWITCH DISCONNECTOR (ISOLATOR)

安裝方式：

單位(Unit) : (mm)

## Mounting / Construction



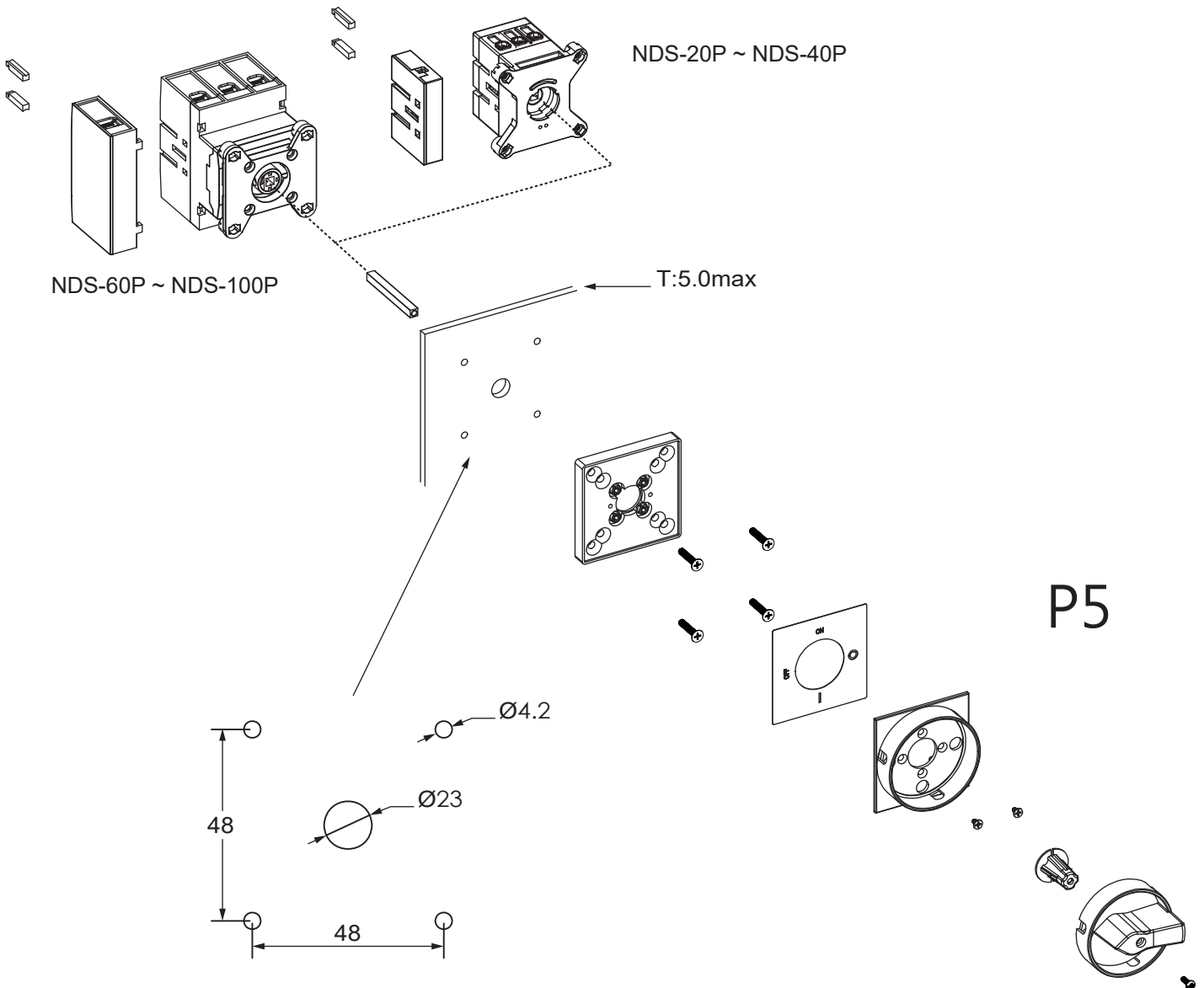
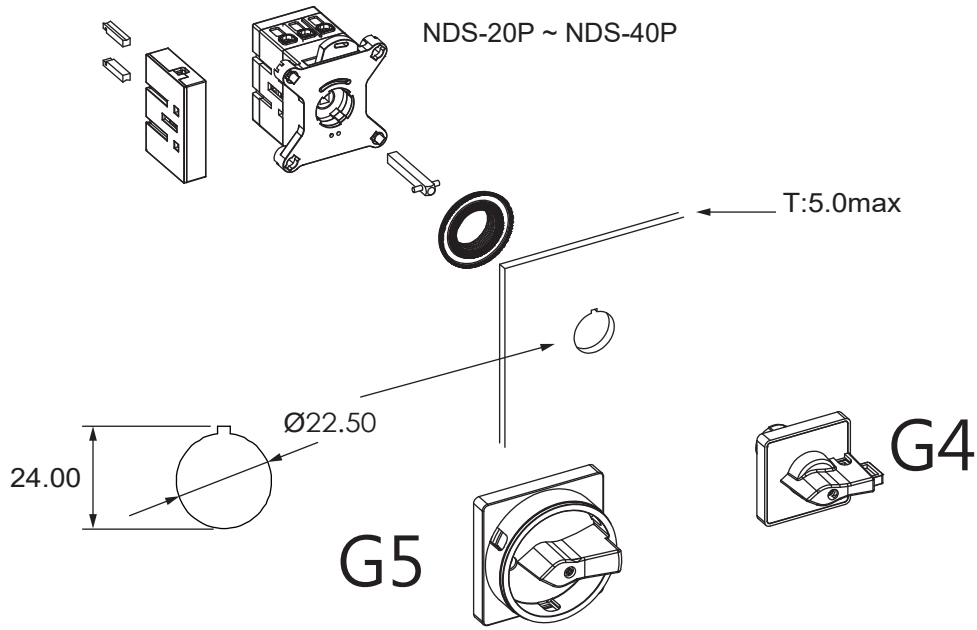


# 隔離開關/SWITCH DISCONNECTOR (ISOLATOR)

安裝方式：

單位(Unit) : (mm)

## Mounting / Construction



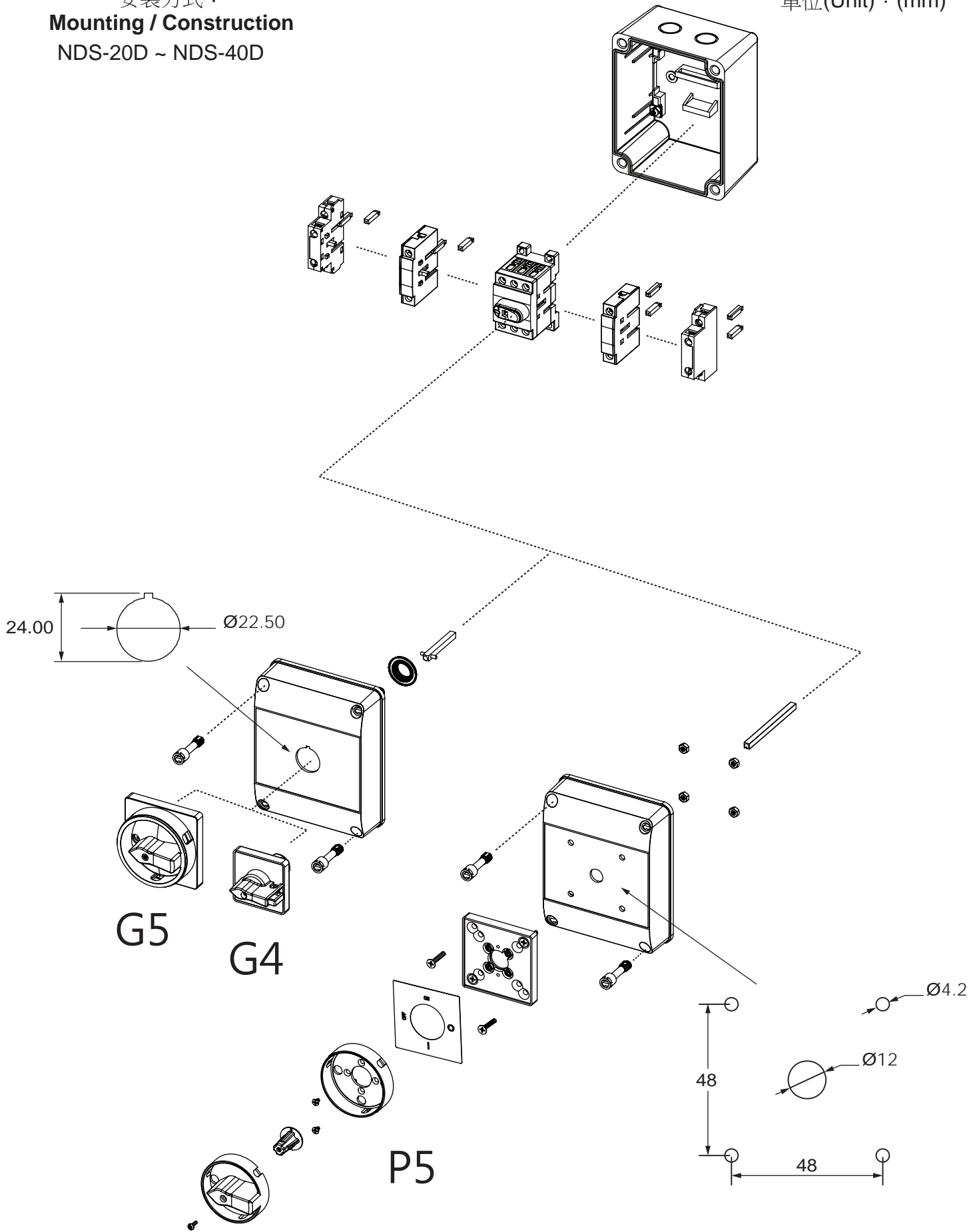
# 隔離開關/SWITCH DISCONNECTOR (ISOLATOR)

安裝方式：

Mounting / Construction

NDS-20D ~ NDS-40D

單位(Unit) : (mm)

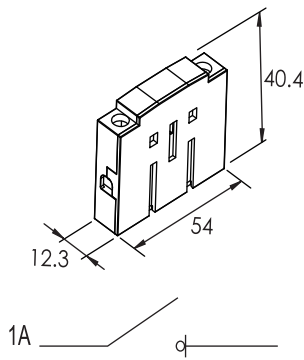


# 隔離開關/SWITCH DISCONNECTOR (ISOLATOR)

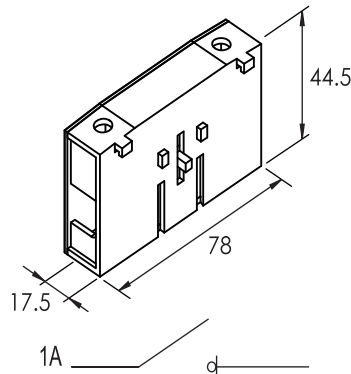
## 配件 Accessories

單位(Unit) : (mm)

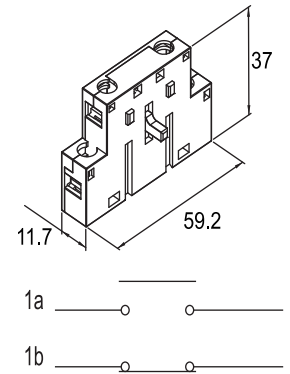
- For Base and DIN-rail mounting  
適用於底板和鋁軌安裝



**NDS-40D-N01**  
(Forth Pole)

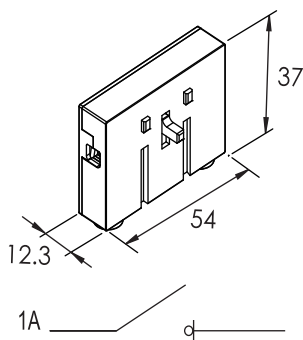


**NDS-100D-N01**  
(Forth Pole)

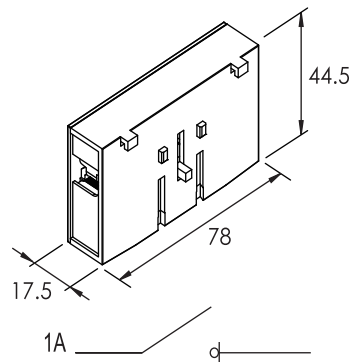


**NDS-D11**  
(Auxiliary Contact)

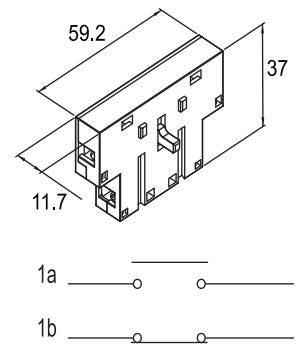
- For Panel mounting (Door mounting)  
適用於面板式安裝



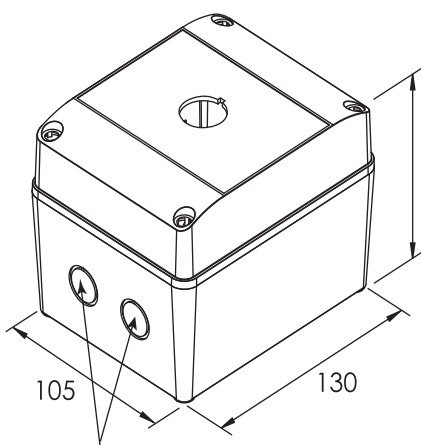
**NDS-40P-N01**  
(Forth Pole)



**NDS-100P-N01**  
(Forth Pole)

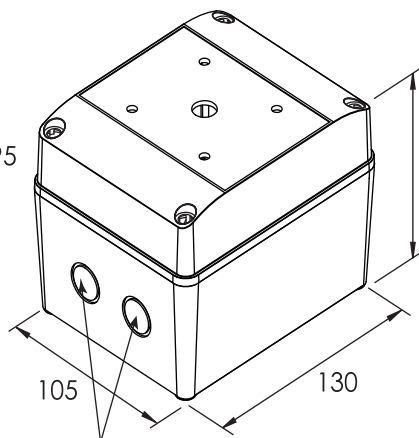


**NDS-P11**  
(Auxiliary Contact)



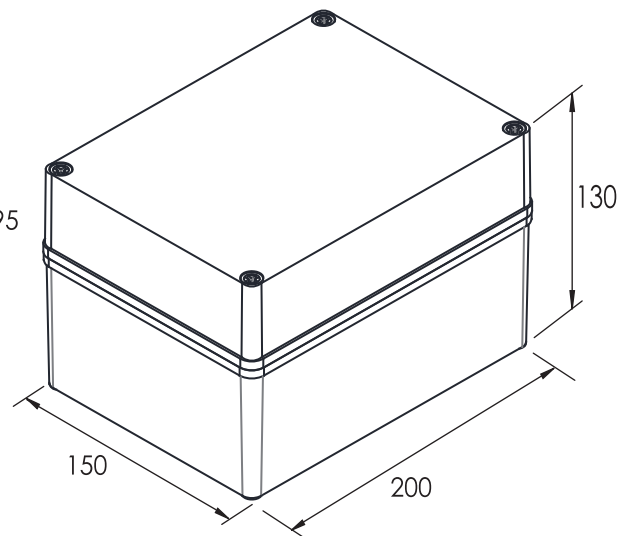
Cable Gland Size: PG16 (M20)

**POTB-40B**  
(G4、G5)



Cable Gland Size: PG16 (M20)

**POTB-40C**  
(P5)



**POTB-100**  
(G4、G5、P5)

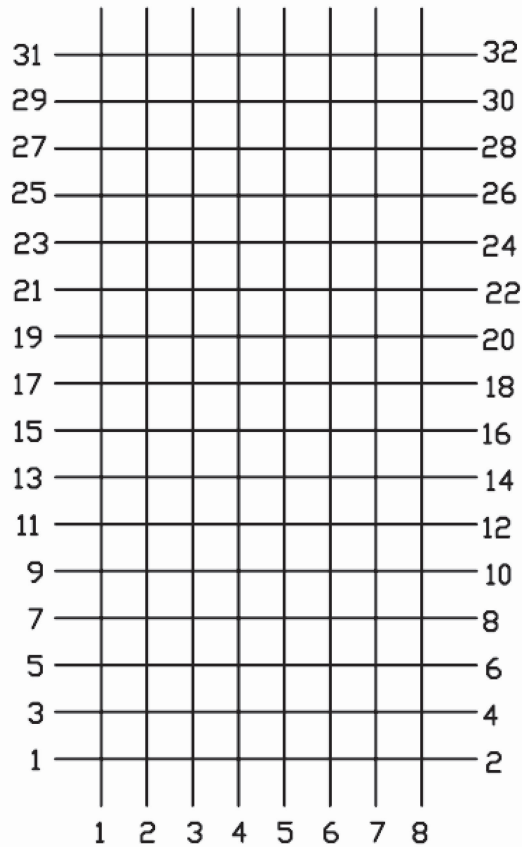
# CAM SWITCHES

特殊需求表格 ( Custom Request Form ) :

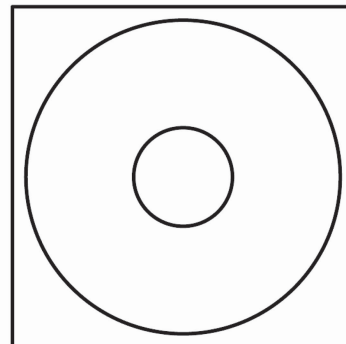
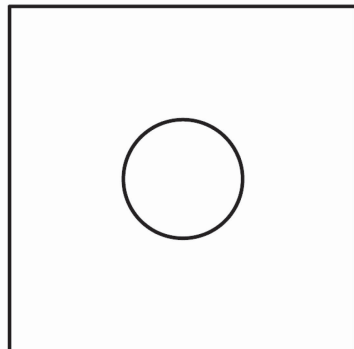
▶ 如有特殊接點需求，請影印此表格後再畫上所需的接點方式或洽詢業務。

Any special requirment can be customized, please copy this form and draw your demand, also can contact NHD sales representatives for more information.

▶ 線路圖 ( Circuit )



▶ 銘板 ( Name plate )



**賀電實業股份有限公司**

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URL:http://www.nhdi.com.tw/



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