

## Y090 Series Pushbutton Switches

### Product Overview

#### Specs

The product has two types: normal type and economical type, containing pilot lamp, pushbuttons, illuminated pushbuttons, mushroom push button, emergency pushbuttons, selector switches, key-lock switches, mushroom key-lock switches, buzzer and so on. The normal diameter of the installation hole is  $\Phi 22\text{mm}$  and can be installed in  $\Phi 25\text{mm}$  or  $\Phi 30\text{mm}$  hole easily with  $\Phi 25\text{mm}$  diameter changing circle and  $\Phi 30\text{mm}$  zinc-aluminum diameter changing nut.

#### Performance

Using high quality inflaming retarding materials. Switch unit is separated independently and the insulating performance is very well. The product meets standards of IEC60947-5-1, GB14048.5 etc.

#### Structure

The switch unit is slow-break and self-cleaning. It uses modular combination mode and you can combine from one to eight switch units optional, so can make the product meet the requirement of many special control circuits.

#### Protective Degree

The standard is IP40 and some types can reach Ip67 with the seal cover.

#### Switch Ratings

Rated Insulation Voltage	Ui: 660V					
Terminal Current	Ith: 10A					
Rated Voltage	24V	48V	110V	220V	380V	500V
Direct Current	10A	5A	2.2A	1.1A		
Alternating Current P.F=0.7			10A	6A	4A	2A

#### Lamp Ratings

Lamp Ratings	AC LED Lamp					Equivalent Circuit
Illuminated Form	Lamp Type		Power Box Type			
Rated Voltage	AC/DC 6V	AC/DC 12V	AC/DC 110V	AC/DC 220V	AC/DC 380V	
	AC/DC 24V		AC 110V	AC 220V	AC 380V	
Rated Current	$\leq 20\text{mA}$					
Lamp Life	40,000 hours					
Cover Color						
						AC/DC: (resistor step-down)
						AC: (capacitor step-down)
						Suitable Frequency: 50 ~ 60Hz

Note: 1. The normal configuration of the lamp is: using direct LED lamp if below 60V, using power box type if above 60V; other special voltage of illuminated type can be customized if you need.

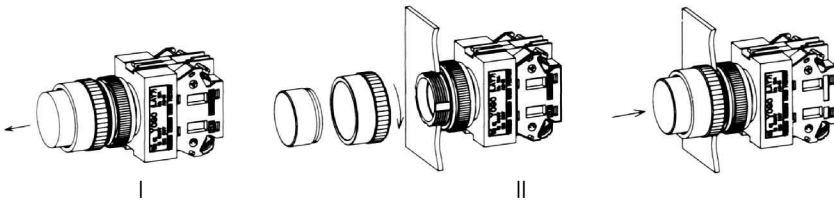
2. The lamp contains current-limiting resistor inside and doesn't need connect outside..

3. The standard is using AC/DC LED lamp, DC LED lamp, dual-color LED lamp and other voltages can be customized.

#### Implication of Type

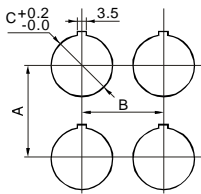
Y090	-	□	■	★	/	◇	◆	/	△	/	▲	/	◎
Code of series	Contact Structure:	Operation Type:	The head type:	◇ expresses selector and key-lock operating position:	Color:	Lamp Voltage (Please check the lamp rating)	Protective Degree:						
If you need economical type, please add 'E' behind it.	10 1NO 01 1NC 11 1NO1NC 22 2NO2NC 33 3NO3NC 44 4NO4NC	D Pilot Lamp BD domed pilot lamp G high type F square type Z alternate type X selector type XB lever type Y key-lock type M mushroom type TS emergency type YM mushroom key-lock type No letter means momentary.	S fast installation type L aluminum type No letter means normal type.	2 two position 3 three position ◆ expresses selector and key-lock operating type: 1 maintain 2 half return 3 self return	R red G green Y yellow O orange B blue W white N black		FP IP67 No letter means Ip40.						
For example: Y090E	NO and NC contacts can be combined optional according to the requirement.												

Instruction



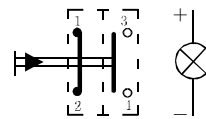
- I ,Take out the head with a starter, and unscrew the aluminum screw.
- II ,Then put the switch into the panel' s hole.
- III ,Screw the screw, then put the head onto the switch.

Installation Dimensions



Type	A	B	C
Normal,Key-lock	≥50mm	≥40mm	Φ22mm Φ25mm Φ30mm
Selector	≥55mm	≥40mm	
Mushroom	≥50mm	≥50mm	
Big Mushroom	≥70 mm	≥70mm	

Circuit Diagram



The switch code is 11.  
1,2 are normal closed;  
3,4 are normal opened;  
The NC contact and NO contact can be combined freely.

The Contact Pair's Close-open State Chart of the Selector Switches and Key-lock Switches.

a, The Contact Pair's Close-open State Chart of 2-position Selector Switch.

Number	Type	↙	↘
1	Y090-11■/2◆	○ ○ ● ●	● ● ○ ○
2	Y090-02■/2◆	● ● ● ●	○ ○ ○ ○
3	Y090-20■/2◆	○ ○ ○ ○	● ● ● ●
4	Y090-22■/2◆	○ ○ ● ●	● ● ○ ○
5	Y090-13■/2◆	● ● ● ●	○ ○ ○ ○
6	Y090-31■/2◆	○ ○ ○ ○	● ● ● ●
7	Y090-04■/2◆	● ● ● ●	○ ○ ○ ○
8	Y090-40■/2◆	○ ○ ○ ○	● ● ● ●
9	Y090-42■/2◆	● ● ● ●	○ ○ ○ ○
10	Y090-24■/2◆	○ ○ ○ ○	● ● ● ●
11	Y090-06■/2◆	● ● ● ●	○ ○ ○ ○
12	Y090-60■/2◆	○ ○ ○ ○	● ● ● ●
13	Y090-33■/2◆	○ ○ ● ●	● ● ○ ○
14	Y090-15■/2◆	● ● ● ●	○ ○ ○ ○
15	Y090-51■/2◆	○ ○ ○ ○	● ● ● ●


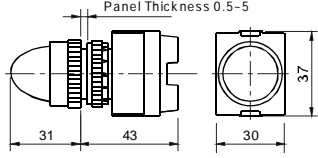

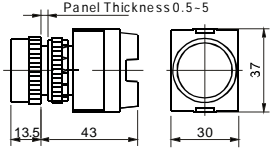

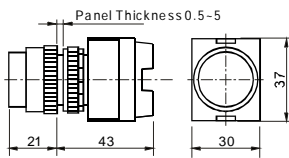

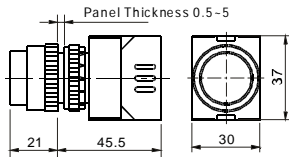


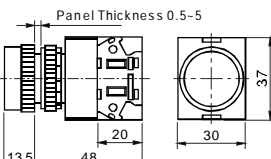

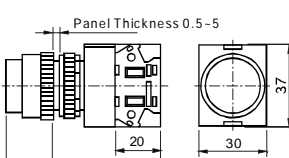
b, The Contact Pair's Close-open State Chart of 3-position Selector Switch.

Number	Type	↙	↕	↘
1	Y090-11■/3◆	● ● ● ●	○ ○ ● ●	○ ○ ○ ○
2	Y090-02■/3◆	○ ○ ● ●	● ● ● ●	● ● ○ ○
3	Y090-20■/3◆	● ● ○ ○	○ ○ ○ ○	○ ○ ● ●
4	Y090-22■/3◆	○ ○ ● ●	● ● ● ●	● ● ○ ○
5	Y090-13■/3◆	● ● ● ●	○ ○ ● ●	○ ○ ○ ○
6	Y090-31■/3◆	● ● ○ ○	○ ○ ○ ○	○ ○ ● ●
7	Y090-04■/3◆	○ ○ ● ●	● ● ● ●	● ● ○ ○
8	Y090-40■/3◆	● ● ○ ○	○ ○ ○ ○	○ ○ ● ●
9	Y090-42■/3◆	○ ○ ● ●	● ● ● ●	● ● ○ ○
10	Y090-24■/3◆	● ● ○ ○	○ ○ ○ ○	○ ○ ● ●
11	Y090-06■/3◆	○ ○ ● ●	● ● ● ●	● ● ○ ○
12	Y090-60■/3◆	● ● ○ ○	○ ○ ○ ○	○ ○ ● ●
13	Y090-33■/3◆	● ● ● ●	○ ○ ● ●	○ ○ ○ ○
14	Y090-15■/3◆	○ ○ ● ●	● ● ● ●	● ● ○ ○
15	Y090-51■/3◆	● ● ○ ○	○ ○ ○ ○	○ ○ ● ●


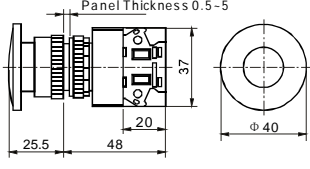


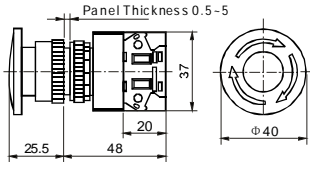



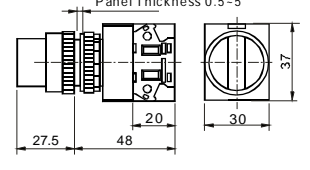







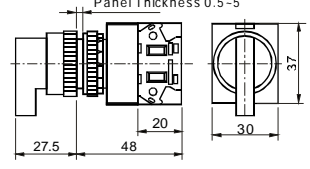







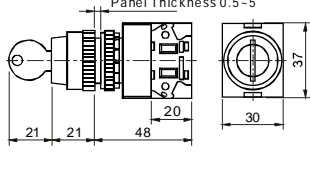






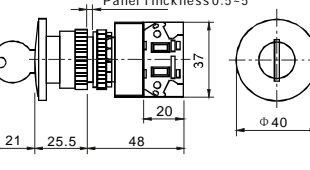






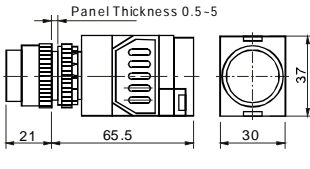
Note: 1, ○ ○ express open state, ● ● express close state.  
2, If you need other contact state, please tell us.

### Cutline of Normal Type

Note:  $\Phi 25$  diameter and  $\Phi 30$  diameter of this series product should be installed with diameter changing circle and please add '  $\Phi 25$ ' or '  $\Phi 30$ ' behind the part number.


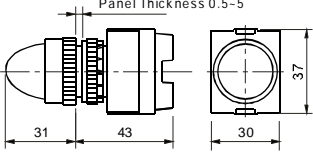

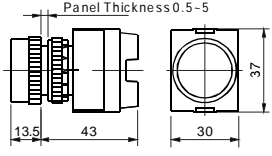

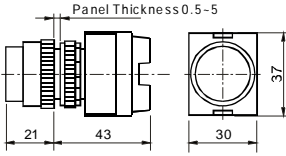

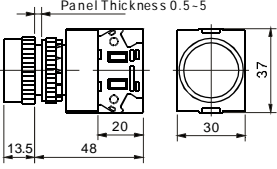

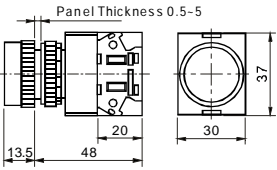

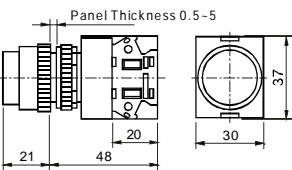

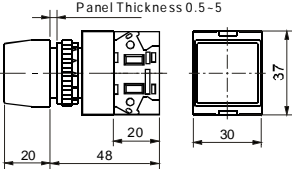
Shape	Type	Type number	Dimension	Remarks
		Y090-BD/ $\Delta$ / $\blacktriangle$		
	The pilot lamp have three head type: fast installation type, normal type and domed type; when voltage $\leq 60V$ , the switch using power box type; when voltage $> 60V$ , the switch using power box type. The illuminant: AC/DC LED lamp	Y090-DS/ $\Delta$ / $\blacktriangle$ / $\odot$		<div style="display: flex; flex-direction: column; align-items: center;"> <div style="background-color: red; width: 15px; height: 15px; margin-bottom: 2px;"></div> <div style="background-color: green; width: 15px; height: 15px; margin-bottom: 2px;"></div> <div style="background-color: yellow; width: 15px; height: 15px; margin-bottom: 2px;"></div> <div style="background-color: orange; width: 15px; height: 15px; margin-bottom: 2px;"></div> <div style="background-color: blue; width: 15px; height: 15px; margin-bottom: 2px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px; margin-bottom: 2px;"></div> </div>
		Y090-D/ $\Delta$ / $\blacktriangle$		
 <p>(Example of voltage above 60V)</p>				
		Momentary Alternate	Y090- $\square$ S/ $\Delta$ / $\blacktriangle$ / $\odot$ Y090- $\square$ ZS/ $\Delta$ / $\blacktriangle$ / $\odot$	
	Momentary Alternate	Y090- $\square$ / $\Delta$ / $\blacktriangle$ / $\odot$ Y090- $\square$ ZS/ $\Delta$ / $\blacktriangle$ / $\odot$		<ul style="list-style-type: none"> <li><math>\odot</math> The black cover can't be used with lamp. Protective</li> <li><math>\odot</math> Degree: IP40, IP67 IP67 should be installed with seal cover..</li> </ul>
	Momentary Alternate	Y090- $\square$ G/ $\Delta$ / $\blacktriangle$ Y090- $\square$ ZG/ $\Delta$ / $\blacktriangle$		<div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; gap: 5px;"> <div style="background-color: red; width: 15px; height: 15px;"></div> <div style="background-color: green; width: 15px; height: 15px;"></div> <div style="background-color: yellow; width: 15px; height: 15px;"></div> <div style="background-color: orange; width: 15px; height: 15px;"></div> </div> <div style="display: flex; gap: 5px; margin-top: 5px;"> <div style="border: 1px solid black; width: 15px; height: 15px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px;"></div> </div> </div> <ul style="list-style-type: none"> <li><math>\odot</math> The black cover can't be used with lamp.</li> </ul>

Note: For  $\Phi 25$  diameter and  $\Phi 30$  diameter series should be installed with diameter changing circle and please add " $\Phi 25$ " or " $\Phi 30$ " behind the part number.


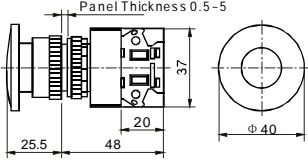


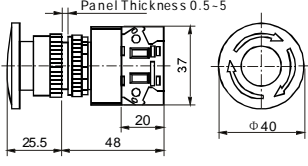



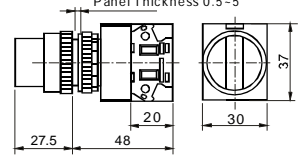







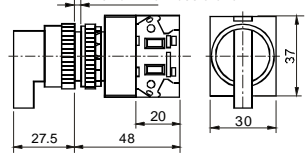







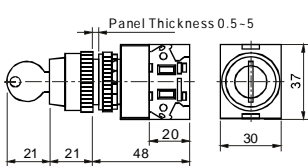






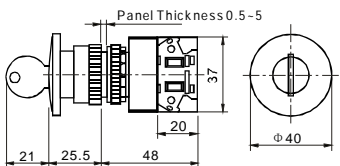






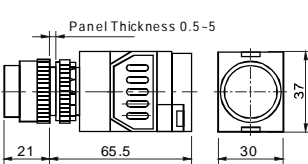
Shape	Type	Type Number	Dimension	Remarks
 <p>Mushroom Pushbutton (Can be illuminated)</p>	Momentary	Y090-□M/△/▲		
	Alternate	Y090-□ZM/△/▲		
 <p>Emergency Pushbutton (can be illuminated)</p>	Push-lock Turn-reset	Y090-□TS/△/▲		 <p>⊙ The dimension of head is: Φ30mm, Φ40mm</p>
 <p>Selector Switch (can be illuminated)</p>	 90° 2 position maintain	Y090-□X/21/△/▲		 <p>⊙ The black cover can't be used with lamp.</p>
	 90° 2 position return	Y090-□X/23/△/▲		
	 45° 3 position maintain	Y090-□X/31/△/▲		
	 45° 3 position half return	Y090-□X/32/△/▲		
	 45° 3 position self return	Y090-□X/33/△/▲		
 <p>Lever Switch</p>	 90° 2 position maintain	Y090-□XB/2 1/△		
	 90° 2 position return	Y090-□XB/2 3/△		
	 45° 3 position maintain	Y090-□XB/3 1/△		
	 45° 3 position half return	Y090-□XB/3 2/△		
	 45° 3 position self return	Y090-□XB/3 3/△		
 <p>Key-lock Switch</p>	 90° 2 position maintain	Y090-□Y/2 1		<p>⊙ Two keys are supplied. The key can be pull out in both positions.</p>
	 90° 2 position return	Y090-□Y/2 3		
	 45° 3 position maintain	Y090-□Y/3 1		
	 45° 3 position half return	Y090-□Y/3 2		
	 45° 3 position self return	Y090-□Y/3 3		
 <p>Mushroom Key-lock Switch</p>	 90° 2 position maintain	Y090-□YM/2 1/△		 <p>⊙ Two keys are supplied.</p>
	 90° 2 position return	Y090-□YM/2 3/△		
	 45° 3 position maintain	Y090-□YM/3 1/△		
	 45° 3 position half return	Y090-□YM/3 2/△		
	 45° 3 position self return	Y090-□YM/3 3/△		
 <p>Buzzer</p>	Buzzer	Y090-M/▲		<p>⊙ Rated sound intensity: 75dB (1m) (rated voltage)</p> <p>⊙ Frequency: 23kHz±300Hz</p>
	Flicker	Y090-S/△/▲		
	Flicker Buzzer	Y090-SM/▲		

**Product Cutline of Economical Type**

 Note:  $\Phi 25$  type of this series product should be installed with diameter changing circle and please add " $\Phi 25$ " behind the type number.

Shape	Type	Type Number	Dimension	Remarks
	The pilot lamp have three head type: fast installation type, normal type and domed type; when voltage $\leq 60V$ , the switch using power box type; when voltage $> 60V$ , the switch using power box type. The illuminant: AC/DC LED lamp	Y090E - BD/ $\Delta$ / $\blacktriangle$		<div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; width: 15px; height: 15px; background-color: red; margin-bottom: 2px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px; background-color: green; margin-bottom: 2px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px; background-color: yellow; margin-bottom: 2px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px; background-color: orange; margin-bottom: 2px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px; background-color: blue; margin-bottom: 2px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px; background-color: white; margin-bottom: 2px;"></div> </div>
		Y090E - DS/ $\Delta$ / $\blacktriangle$ / $\odot$		
		Y090E - D/ $\Delta$ / $\blacktriangle$		
Fast Installation Flat Head (can be illuminated) 	Momentary	Y090E - $\square$ S/ $\Delta$ / $\blacktriangle$ / $\odot$		<div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; width: 15px; height: 15px; background-color: red; margin-bottom: 2px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px; background-color: green; margin-bottom: 2px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px; background-color: yellow; margin-bottom: 2px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px; background-color: orange; margin-bottom: 2px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px; background-color: blue; margin-bottom: 2px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px; background-color: white; margin-bottom: 2px;"></div> <div style="border: 1px solid black; width: 15px; height: 15px; background-color: black; margin-bottom: 2px;"></div> </div> <p><math>\odot</math> The black cover can't be used with lamp. Protective</p> <p><math>\odot</math> Degree: IP40, IP67 IP67 should be installed with seal cover.</p>
	Alternate	Y090E - $\square$ ZS/ $\Delta$ / $\blacktriangle$ / $\odot$		
Flat Head (Can be illuminated) 	Momentary	Y090E - $\square$ / $\Delta$ / $\blacktriangle$ / $\odot$		
	Alternate	Y090E - $\square$ ZS/ $\Delta$ / $\blacktriangle$ / $\odot$		
Long Head (Can be illuminated) 	Momentary	Y090E - $\square$ G/ $\Delta$ / $\blacktriangle$		
	Alternate	Y090E - $\square$ ZG/ $\Delta$ / $\blacktriangle$		
Square Flat head (can be illuminated) 	Momentary	Y090E - $\square$ F/ $\Delta$ / $\blacktriangle$		
	Alternate	Y090E - $\square$ ZF/ $\Delta$ / $\blacktriangle$		

Note:  $\Phi 25$  diameter should be installed with diameter changing circle and please add “ $\Phi 25$ ” behind the part number.

Shape	Type	Type Number	Dimension	Remarks
 <p>Mushroom Pushbutton (can be illuminated)</p>	Momentary	Y090E-□M/△/▲		
	Alternate	Y090E-□ZM/△/▲		
 <p>Emergency Pushbutton (can be illuminated)</p>	Push-lock	Y090E-□TS/△/▲		 <p>⊙ The dimension of head is: Φ30mm, Φ40mm</p>
	Turn-reset			
 <p>Selector Switch (can be illuminated)</p>	 90° 2 position maintain	Y090E-□X/21/△/▲		 <p>⊙ The black cover can't be used with lamp.</p>
	 90° 2 position return	Y090E-□X/23/△/▲		
	 45° 3 position maintain	Y090E-□X/31/△/▲		
	 45° 3 position half return	Y090E-□X/32/△/▲		
	 45° 3 position self return	Y090E-□X/33/△/▲		
 <p>Lever Switch</p>	 90° 2 position maintain	Y090E-□XB/21/△		
	 90° 2 position return	Y090E-□XB/23/△		
	 45° 3 position maintain	Y090E-□XB/31/△		
	 45° 3 position half return	Y090E-□XB/32/△		
	 45° 3 position self return	Y090E-□XB/33/△		
 <p>Key-lock Switch</p>	 90° 2 position maintain	Y090E-□Y/21		<p>⊙ Two keys are supplied. The key can be pull out in both positions.</p>
	 90° 2 position return	Y090E-□Y/23		
	 45° 3 position maintain	Y090E-□Y/31		
	 45° 3 position half return	Y090E-□Y/32		
	 45° 3 position self return	Y090E-□Y/33		
 <p>Mushroom Key-lock Switch</p>	 90° 2 position maintain	Y090E-□YM/21/△		 <p>⊙ Two keys are supplied.</p>
	 90° 2 position return	Y090E-□YM/23/△		
	 45° 3 position maintain	Y090E-□YM/31/△		
	 45° 3 position half return	Y090E-□YM/32/△		
	 45° 3 position self return	Y090E-□YM/33/△		
 <p>Buzzer</p>	Buzzer	Y090E-M/▲		<p>⊙ Rated sound intensity: 75dB (1m) (rated voltage)</p> <p>⊙ Frequency: 2.3kHz±300Hz</p>
	Flicker	Y090E-S/△/▲		
	Flicker Buzzer	Y090E-SM/▲		