

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

Specifications

Operating Temperature	-25°C ~ +55°C (no freezing)
Operating Humidity	45 ~ 85%RH (no condensation)
Contact Material	- silver - silver alloy - gold-clad silver, cladding thickness is 3 μm
Contact Resistance	$\leq 50\text{m}\Omega$
Insulation Resistance	$\geq 100\text{M}\Omega$
Dielectric Strength	3000 V, AC 50Hz
Vibration Resistance	50Hz, Amplitude 1.0mm p-p
Shock Resistance	$\geq 10\text{g}$
Life	Mechanical Momentary type: $\geq 1,000,000$ times. Alternate type, selector type: $\geq 500,000$ times. Key-lock type, emergency type: $\geq 200,000$ times.
	Electrical $\geq 50,000$ times
Terminal	Thread connection, diameter of welded wire: 2 \times 1.5mm max Connecting link: 6.3 \times 0.8mm
Operation	Operating Force: 800gf - 2200gf (according to the quantity of switch units) Operating Travel: About 5.5mm (Pushbuttons)

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.

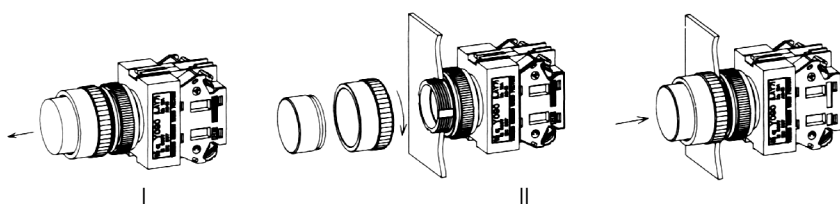
2. The lamp contains current-limiting resistor inside and doesn't need connect outside..

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

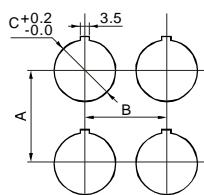
Y090	-	□	■	★	/	◇	◆	/	△	/	▲	/	◎
Code of series	Contact Structure:	Operation Type:	The head type:	◇ expresses selector and key-lock operating position:	Color:	Lamp Voltage (Please check the lamp rating)	Protective Degree:						
If you need economical type, please add 'E' behind it.	10 1NO 01 1NC 11 1NO1NC 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



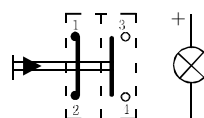
- I ,Take out the head with a starter, and unscrew the aluminum screw.
- II ,Then put the switch into the panel' s hole.
- III ,Screw the screw, then put the head onto the switch.

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◆	○ ○ ○ ○	● ● ● ●


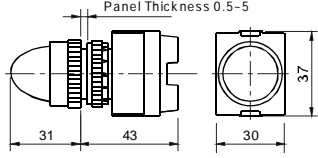

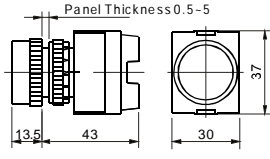

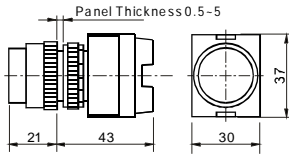

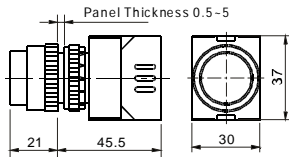


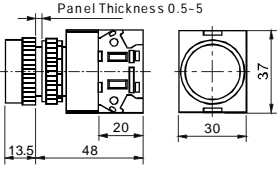

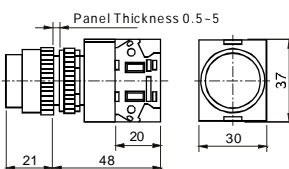
b, The Contact Pair's Close-open State Chart of 3-position Selector Switch.

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◆	○ ○ ○ ○	○ ○ ○ ○	○ ○ ● ●


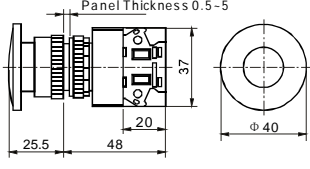

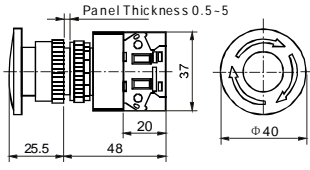


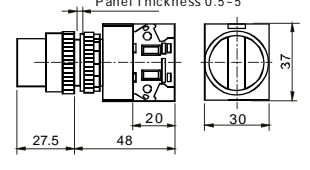






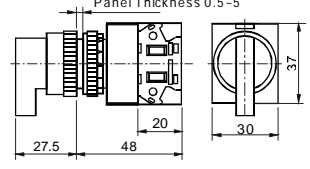






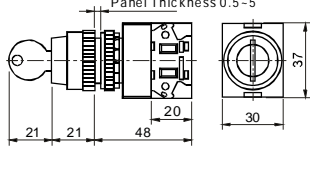






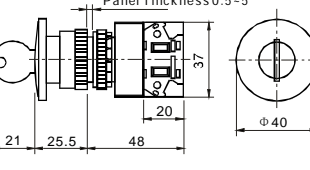





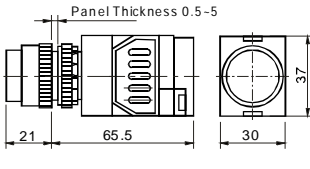
Note: 1, ○ ○ express open state, ● ● express close state.
2, If you need other contact state, please tell us.

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.


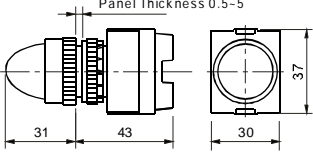

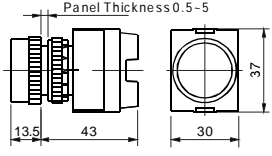

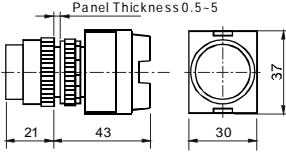

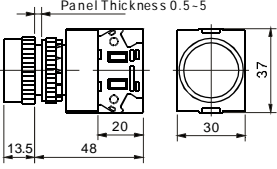

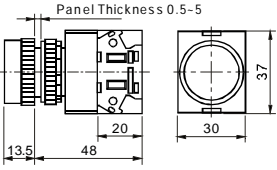

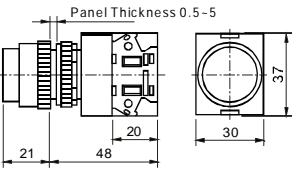

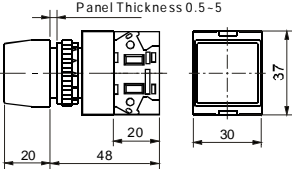
Shape	Type	Type number	Dimension	Remarks
		Y090-BD/ Δ / \blacktriangle		
	The pilot lamp have three head type: fast installation type, normal type and domed type; when voltage $\leq 60V$, the switch using power box type; when voltage $> 60V$, the switch using power box type. The illuminant: AC/DC LED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

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.


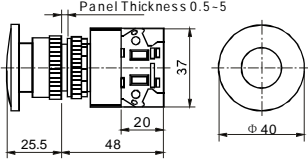


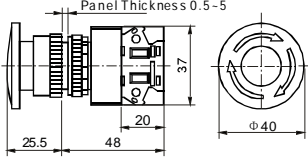



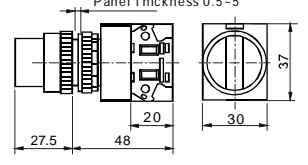







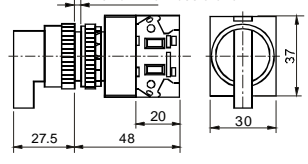







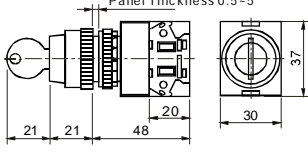






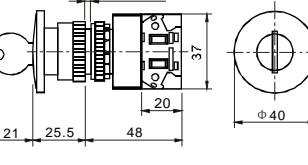






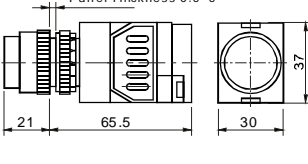
Shape	Type	Type Number	Dimension	Remarks
Mushroom Pushbutton (Can be illuminated) 	Momentary	Y090-□M/△/▲		R G Y
	Alternate	Y090-□ZM/△/▲		
Emergency Pushbutton (can be illuminated) 	Push-lock Turn-reset	Y090-□TS/△/▲		R G Y ☉ The dimension of head is: $\Phi 30$ mm, $\Phi 40$ mm
Selector Switch (can be illuminated) 	 90° 2 position maintain	Y090-□X/21/△/▲		R G N ☉ The black cover can't be used with lamp.
	 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/△/▲		
Lever Switch 	 90° 2 position maintain	Y090-□XB/2 1/△		R G N
	 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/△		
Key-lock Switch 	 90° 2 position maintain	Y090-□Y/2 1		☉ Two keys are supplied. The key can be pull out in both positions.
	 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		
Mushroom Key-lock Switch 	 90° 2 position maintain	Y090-□YM/2 1/△		R G ☉ Two keys are supplied.
	 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/△		
Buzzer 	Buzzer	Y090-M/▲		☉ Rated sound intensity: 75dB (1m) (rated voltage) ☉ Frequency: 23kHz \pm 300Hz
	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/ Δ / \blacktriangle		<div style="display: flex; flex-direction: column; align-items: center;"> R G Y O B W </div>
		Y090E - DS/ Δ / \blacktriangle / \odot		
		Y090E - D/ Δ / \blacktriangle		
Fast Installation Flat Head (can be illuminated) 	Momentary Alternate	Y090E - \square S/ Δ / \blacktriangle / \odot Y090E - \square ZS/ Δ / \blacktriangle / \odot		<div style="display: flex; flex-direction: column; align-items: center;"> R G Y O B W N </div> <p>\odot The black cover can't be used with lamp. Protective</p> <p>\odot Degree: IP40, IP67 IP67 should be installed with seal cover.</p>
Flat Head (Can be illuminated) 	Momentary Alternate	Y090E - \square / Δ / \blacktriangle / \odot Y090E - \square ZS/ Δ / \blacktriangle / \odot		
Long Head (Can be illuminated) 	Momentary Alternate	Y090E - \square G/ Δ / \blacktriangle Y090E - \square ZG/ Δ / \blacktriangle		
Square Flat head (can be illuminated) 	Momentary Alternate	Y090E - \square F/ Δ / \blacktriangle Y090E - \square ZF/ Δ / \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/▲		