

LAS1 Series Pushbutton Switch

Characteristic

Specs

Having three head shape: round ($\Phi 18\text{mm}$), square ($18 \times 18\text{mm}$) and rectangular ($18 \times 24\text{mm}$), containing pilot lamps, pushbuttons, illuminated push buttons, selector switches and key- lock switches. The normal diameter of the installation hole is $\Phi 16\text{mm}$, and some type can be installed in $\Phi 22\text{mm}$ hole easily with the diameter changing circle.

Performance

The product has stable property, small contact resistance, strong insulation resistance, anti-vibration and so on. It meets to standards of IEC60947-5-1, GB14048.5 etc.

Structure

The switch have the advantage of fast-break and self-cleaning, and each of them contains 1NO and 1NC terminal. Every pushbutton also can possess from one to four switch units.

Protective Degree

The standard degree is IP40, some of type can reach IP67 with the seal cover. And the pin insert type can be made in Ip65.

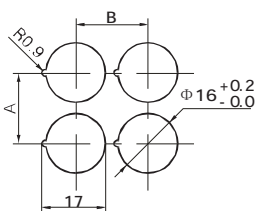
Lamp ratings

Lamp type	AC LED Lamp (Standard)			Neon Lamp	
Rated voltage	AC/DC6V	AC/DC12V	AC/DC24V	AC110V	AC220V
	AC/DC110V		AC/DC220V		
Covers color	R G Y O B W			R G	
Life	About 40,000 hours			About 20,000 hours	

Note: the lamp contains a current-limiting resistor inside and doesn't need external connection.

DC LED lamp, dual-color LED lamp and other voltages can be customized.

Installation Dimensions



type	A	B
Round	$\geq 18\text{mm}$	$\geq 18\text{mm}$
Square	$\geq 18\text{mm}$	$\geq 18\text{mm}$
Rectangular	$\geq 18\text{mm}$	$\geq 24\text{mm}$
Mushroom	$\geq 24\text{mm}$	$\geq 24\text{mm}$
Big square	$\geq 24\text{mm}$	$\geq 24\text{mm}$
Big rectangular	$\geq 18\text{mm}$	$\geq 24\text{mm}$

Implication of Type

LAS1									★	—	□	■	/	◇	/	◆	/	△	/	▲	/	◎
Code of series	The front shape: Y Round F Square J rectangular M mushroom DF big square DJ big rectangular	Contact structure: 11 1NO1NC 22 2NO2NC 33 3NO3NC 44 4NO4NC	Operating type: D pilot lamp Z alternate type Y key- lock type X selector type The momentary type is without letter	For selector and key- lock : 2 two position	The connection type: JC :pin insert terminal the soldering type is without letter	Color: R red G green Y yellow O orange B blue W white N black	Lamp Voltage (Please check the lamp rating)	Protective degree: FP: Ip67 pin insert type can be customized in Ip65. Ip40 is without letter														

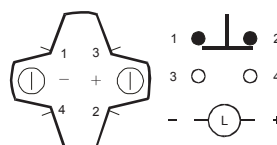
Switch Ratings

Thermal Current I _{th}		5A		
Rated Voltage		24V	125V (110V)	250V (220V)
Direct Current		2A	0.2A	0.1A
Alternating current	P.F=1		5A	3A
	P.F=0.7		3A	2A

Specifications

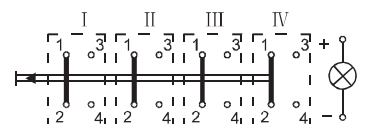
Operating Temperature		-25°C ~ +55°C (no freezing)
Operating Humidity		45 ~ 85%RH (no condensation)
Contact Material		- silver - silver alloy - gold-clad silver, cladding thickness is 3μm
Contact Pressure		About 0.3N (about 30g)
Contact Resistance		$\leq 50\text{m}\Omega$
Insulation Resistance		$\geq 100\text{M}\Omega$
Rated insulation Voltage		250V, ac/dc
Dielectric strength	Between contact and lamp terminals:	2000V, AC 50Hz, 1min
	Between terminal of the same pole:	1000V, AC 50Hz, 1min
	Between terminal of different pole:	2000V, AC 50Hz, 1min
Vibration Resistance		50Hz, amplitude 1.2mm P-P
Shock Resistance		$\geq 10\text{g}$
Life	Momentary Type	1,000,000 times
	Alternate, Selector and Key-lock Type	500,000 times
	Electrical	50,000 times
Terminal		Diameter of welded wire: 2×0.8mm max Area of copper wire: 0.75mm ²
Solder Heat Resistance		230°C (no more than 3 second)
Operating Force		200gf~500gf (According to the quantity of switch units)
Operating Travel		$\approx 3\text{mm}$ (pushbutton)

Bottom Preview



Circuit diagram

The circuit diagram of illuminated Push buttons with four poles as following:



LAS1 Pilot lamp

Product Outline

Model Number	LAS1Y- D/△/▲/○	LAS1F- D/△/▲/○	LAS1J- D/△/▲/○
Shape			
Remarks	R G Y O B W		

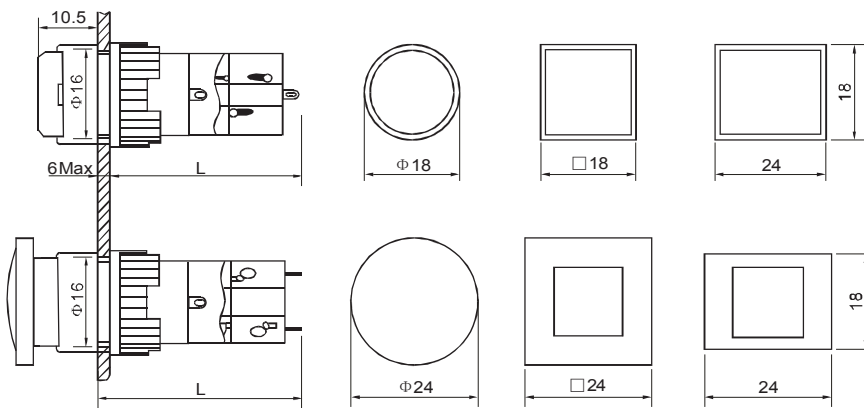
LAS1 Pushbuttons, Illuminated Pushbuttons

Product Outline

Shape	Contact Configuration	Operation Type	Type Number	Remarks
Round (can be used with lamp) 	1NO, 1NC	Momentary	LAS1Y- 11/△/▲/○	R G Y O B W N - The black cover can't be used with the illuminated push buttons - Protective Degree: IP40, IP67; IP67 should be installed with seal covers.
		Alternate	LAS1Y- 11Z/△/▲/○	
	2NO, 2NC	Momentary	LAS1Y- 22/△/▲/○	
		Alternate	LAS1Y- 22Z/△/▲/○	
	3NO, 3NC	Momentary	LAS1Y- 33/△/▲/○	
		Alternate	LAS1Y- 33Z/△/▲/○	
Square (can be used with lamp) 	1NO, 1NC	Momentary	LAS1F- 11/△/▲/○	
		Alternate	LAS1F- 11Z/△/▲/○	
	2NO, 2NC	Momentary	LAS1F- 22/△/▲/○	
		Alternate	LAS1F- 22Z/△/▲/○	
	3NO, 3NC	Momentary	LAS1F- 33/△/▲/○	
		Alternate	LAS1F- 33Z/△/▲/○	
Rectangular (can be used with lamp) 	1NO, 1NC	Momentary	LAS1J- 11/△/▲/○	
		Alternate	LAS1J- 11Z/△/▲/○	
	2NO, 2NC	Momentary	LAS1J- 22/△/▲/○	
		Alternate	LAS1J- 22Z/△/▲/○	
	3NO, 3NC	Momentary	LAS1J- 33/△/▲/○	
		Alternate	LAS1J- 33Z/△/▲/○	
Mushroom (can be used with lamp) 	1NO, 1NC	Momentary	LAS1M- 11/△/▲	R G - The black cover can't be used with the illuminated push buttons - Protective Degree: IP40
		Alternate	LAS1M- 11Z/△/▲	
	2NO, 2NC	Momentary	LAS1M- 22/△/▲	
		Alternate	LAS1M- 22Z/△/▲	
	3NO, 3NC	Momentary	LAS1M- 33/△/▲	
		Alternate	LAS1M- 33Z/△/▲	
	4NO, 4NC	Momentary	LAS1M- 44/△/▲	
		Alternate	LAS1M- 44Z/△/▲	

Shape	Contact Configuration	Operation Type	Type Number	Remarks
Big Square (can be illuminated) 	1NO, 1NC	Momentary	LAS1DF- 11/△/▲	R G Y O B W N ⊙ The black cover can't be used for the illuminated push buttons ⊙ Protective Degree: IP40.
		Alternate	LAS1DF- 11Z/△/▲	
	2NO, 2NC	Momentary	LAS1DF- 22/△/▲	
		Alternate	LAS1DF- 22Z/△/▲	
	3NO, 3NC	Momentary	LAS1DF- 33/△/▲	
		Alternate	LAS1DF- 33Z/△/▲	
	4NO, 4NC	Momentary	LAS1DF- 44/△/▲	
		Alternate	LAS1DF- 44Z/△/▲	
Big Rectangular (can be illuminated) 	1NO, 1NC	Momentary	LAS1DJ- 11/△/▲	
		Alternate	LAS1DJ- 11Z/△/▲	
	2NO, 2NC	Momentary	LAS1DJ- 22/△/▲	
		Alternate	LAS1DJ- 22Z/△/▲	
	3NO, 3NC	Momentary	LAS1DJ- 33/△/▲	
		Alternate	LAS1DJ- 33Z/△/▲	
	4NO, 4NC	Momentary	LAS1DJ- 44/△/▲	
		Alternate	LAS1DJ- 44Z/△/▲	

Shape and Dimensions



Type	L
pilot lamp	20mm
Monopole (1NO, 1NC)	29mm
Dipole (2NO, 2NC)	36.5mm
Three-pole (3NO, 3NC)	44mm
Quadrupole (4NO, 4NC)	51.5mm

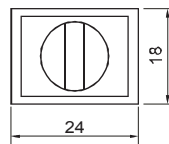
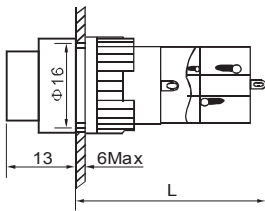
LAS1 Selector Switches

Product Outline

Shape	Contact Configuration	Type Number	Remarks
Round (can be illuminated) 	1NO, 1NC	LAS1Y- 11X/2/△/▲	R G N L R 90° 2 Position Maintained ⊙ The black cover can't be used with the illuminated push buttons; ⊙ Protective Degree: IP40.
	2NO, 2NC	LAS1Y- 22X/2/△/▲	
	3NO, 3NC	LAS1Y- 33X/2/△/▲	
	4NO, 4NC	LAS1Y- 44X/2/△/▲	
Square (can be illuminated) 	1NO, 1NC	LAS1F- 11X/2/△/▲	
	2NO, 2NC	LAS1F- 22X/2/△/▲	
	3NO, 3NC	LAS1F- 33X/2/△/▲	
	4NO, 4NC	LAS1F- 44X/2/△/▲	

Shape	Contact Configuration	Type Number	Remarks
Rectangular (can be illuminated) 	1NO, 1NC	LAS1J- 11X/2/△/▲	R G N LR V 90° 2P osition Maintained ⊙ The black cover can't be used with the illuminated push buttons; ⊙ Protective Degree: IP 40.
	2NO, 2NC	LAS1J- 22X/2/△/▲	
	3NO, 3NC	LAS1J- 33X/2/△/▲	
	4NO, 4NC	LAS1J- 44X/2/△/▲	

Shape and Dimensions



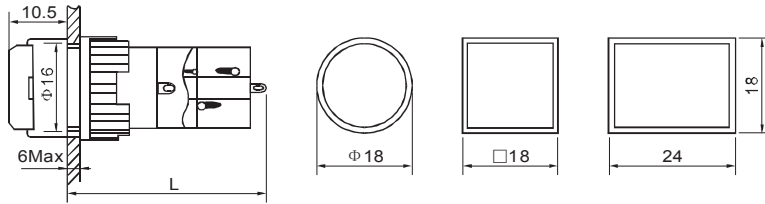
Type	L
Monopole (1NO, 1NC)	29mm
Dipole (2NO, 2NC)	36.5mm
Three- pole (3NO, 3NC)	44mm
Quadrapole (4NO, 4NC)	51.5mm

LAS1 key- lock Switches

Product Cutline

Shape	Contact Configuration	Type Number	Remarks
Round 	1NO, 1NC	LAS1Y- 11Y/2	R G N LR V 90° 2 Position Maintained ⊙ Two keys are supplied, the keys can be pull out in both position. ⊙ Protective Degree: IP40.
	2NO, 2NC	LAS1Y- 22Y/2	
	3NO, 3NC	LAS1Y- 33Y/2	
	4NO, 4NC	LAS1Y- 44Y/2	
Square 	1NO, 1NC	LAS1F- 11Y/2	
	2NO, 2NC	LAS1F- 22Y/2	
	3NO, 3NC	LAS1F- 33Y/2	
	4NO, 4NC	LAS1F- 44Y/2	
Rectangular 	1NO, 1NC	LAS1J- 11Y/2	
	2NO, 2NC	LAS1J- 22Y/2	
	3NO, 3NC	LAS1J- 33Y/2	
	4NO, 4NC	LAS1J- 44Y/2	

Shape and Dimensions



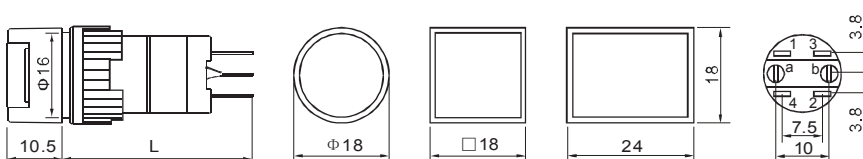
Type	L
Monopole (1NO, 1NC)	29mm
Dipole (2NO, 2NC)	36.5mm
Three- pole (3NO, 3NC)	44mm
Quadrupole (4NO, 4NC)	51.5mm

LAS1 Pin Terminal Pilot Lamp, Pushbuttons and Illuminated Pushbuttons

Product Cutline

Shape	Contact Configuration	Operation Type	Type Number	Remarks
Round (can be illuminated) 	—	Pilot lamp	LAS1Y- D/JC/△/▲/◎	R G Y O B W N ◎ The black cover can't be used with the illuminated push buttons ◎ Protective Degree: IP40,IP65,IP67; IP67 should be installed with seal covers.
	1NO 1NC	Momentary	LAS1Y- 11/JC/△/▲/◎	
		Alternate	LAS1Y- 11Z/JC/△/▲/◎	
	2NO 2NC	Momentary	LAS1Y- 22/JC/△/▲/◎	
		Alternate	LAS1Y- 22Z/JC/△/▲/◎	
Square (can be illuminated) 	—	Pilot lamp	LAS1F- D/JC/△/▲/◎	
	1NO 1NC	Momentary	LAS1F- 11/JC/△/▲/◎	
		Alternate	LAS1F- 11Z/JC/△/▲/◎	
	2NO 2NC	Momentary	LAS1F- 22/JC/△/▲/◎	
		Alternate	LAS1F- 22Z/JC/△/▲/◎	
	Rectangular (can be illuminated) 	—	Pilot lamp	LAS1J- D/JC/△/▲/◎
		1NO 1NC	Momentary	LAS1J- 11/JC/△/▲/◎
Alternate			LAS1J- 11Z/JC/△/▲/◎	
2NO 2NC		Momentary	LAS1J- 22/JC/△/▲/◎	
		Alternate	LAS1J- 22Z/JC/△/▲/◎	

Shape and Dimensions



Type	L
Monopole (1NO, 1NC)	36mm
Dipole (2NO, 2NC)	44mm