

# Panel Actuators and Indicators

## Type PB

### Extended Push Buttons



- Ø 22mm (Ø0.87") Standard and bezel style
- Self-hold or spring return
- Button colour choice
- Illuminated version made by LED
- cULus and CE
- IEC/EN 60947-5-1, UL 508, IEC/EN 60073, IEC/EN 60529

### Product description

Pushbutton switches are mechanical switches that are pushed down to open or to close the electric contacts. They are mostly used to start/stop electric circuits or

devices like lamps, motors, etc. They should be ordered in parts (operator + holder + contact block) and installed in an enclosure.

### Approvals



### Types

E = Extended round  
IE = Illuminated extended round

<sup>1</sup> = Light function is obtained by the lamp element pg.19

### Colours

R = Red  
K = Black  
Y = Yellow  
G = Green

### Ordering key

**PB 22S IE 0 R \***

Series \_\_\_\_\_  
Dimension and Style \_\_\_\_\_  
Type \_\_\_\_\_  
Action \_\_\_\_\_  
Colour \_\_\_\_\_

\* Not all configurations available – see page 5 for complete list

### Dimensions and styles

22S = Ø22mm (Ø0.87") Standard style  
22B = Ø22mm (Ø0.87") Bezel style

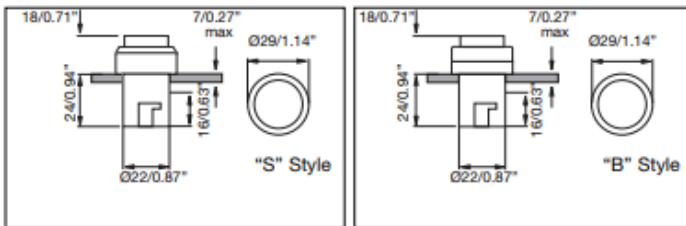
### Actions

0 = Spring return

### General data

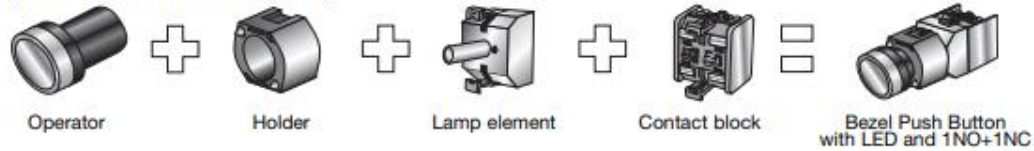
Peripheral of actuator	AL
Actuator	Pa
Mechanical life	≥3 x 10 <sup>6</sup> cycles
Operating temperature	-25 to +70°C (-13 to +158°F)
Storage temperature	-30 to +80°C (-22 to +176°F)
Degree of protection	IP 65

### Dimensions - Push Buttons mm/inches



## Assembling and Mounting

It come easy to get a complete product. Just to choose the operator, the holder, the lamp element if illuminated function is required and the contact block (up to 3).



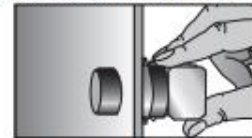
To install it, the only tool needed is a screwdriver. The same used to wiring the contact block can be used to fix the push-button.



The operator will be inserted into the panel.



The holder will be secured at the back by two screws or nut.



The contact block is snapped on.

## Accessories for Panel Actuators



### Sealing cover IP67

Always on the head of operators, waterproof and dust, IP67. Silicon rubber

PA SEAL COV



### Protection cover

Always on the head of button, prevent strike and mistaking operation. Lockable.

PC

PA PB COV



### Mounting ring Ø22mm (0.87")

Installed on plastic panel to strengthen mounting.

FE

PA MR 22



### Reducing ring for Pilot Light Ø22mm (0.87")

To mount the Ø22mm (0.87") pilot light into the hole for Ø25mm (0.98") or Ø30mm (1.18") of the panel.

ABS

Ø30mm/Ø1.18"

PA RR 3



### Fastening connector for Pilot Light Ø22mm (0.87")

Improve the quality of installation and reduce the time of installations.

PC

PA PL CONN



### Label frame

Hang it on the push button or pilot light, for symbol or text explanation.

PC

10mm/0.39"  
18mm/0.71"

PA LBF 11  
PA LBF 18



### Warning plate

For emergency stop push buttons. Thickness 1.5mm/0.059"

ABS

Ø60mm/Ø2.36"  
Ø90mm/Ø3.54"

PA WP 6  
PA WP 9




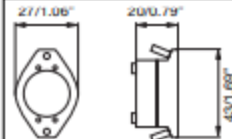

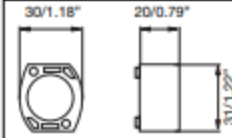

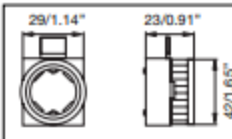
### Panel hole cap Ø22mm (0.87")

For blocking up prepared or useless holes on the panels.

ABS

PA PHC 22

## Holders

	<b>Holder type "M"</b>	<b>PB MB M</b> <b>Zn + PBT</b>	
	Code		
	Material		
	<b>Holder type "P"</b>	<b>PB MB P</b> <b>PBT</b>	
	Code		
	Material		
	<b>Holder type "N"</b>	<b>PB MB N</b> <b>PC</b>	
	Code		
	Material		

## Lamp Element



### Ordering key

**PALAMP R 220A\***

Type \_\_\_\_\_  
 Colour \_\_\_\_\_  
 Voltage \_\_\_\_\_

*\* Not all configurations available - see page 5 for complete list*

### Approvals



### Colours

R = Red                                    Y = Yellow  
 W = Clear/White                        G = Green  
 B = Blue

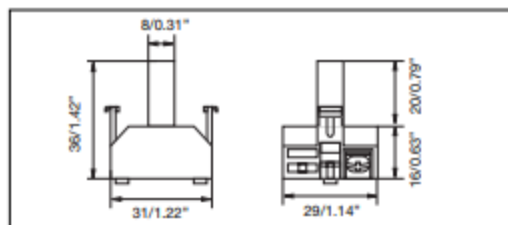
### Voltage

12 = 12VAC/DC                           110 = 110VAC/DC  
 24 = 24VAC/DC                         220A = 220VAC

### Technical data

Rated imp. withstand voltage $U_{imp}$	2500VAC 50Hz 1min.
Rated insulation Voltage $U_i$	500VAC
Allowable voltage fluctuation	$\pm 20\%$
Continuous operating life	$\geq 100.000h$
Ultrahigh brightness	$\geq 100cd/m^2$ ( $\geq 9.29ftc$ )
Applying frequency	50-60Hz
Current consumption (AC/DC)	$\leq 18mA$
Operating temperature	$-25$ to $+70^\circ C$ ( $-13$ to $+158^\circ F$ )
Storage temperature	$-30$ to $+80^\circ C$ ( $-22$ to $+176^\circ F$ )

### Dimensions mm/inches



### Wiring Notes

- 1) Use  $60^\circ C$  or  $75^\circ C$  copper (CU) conductor and wire size range 18AWG, stranded or solid.
- 2) Terminal tightening torque 0.6Nm (5.3in.lb)
- 3) Recommended external fuse - listed or R/C fuses, Supplemental (JDYX, JDYX2) rated 3A maximum.

# Panel Actuators and Indicators

## Type PA2

### Contact Block

CARLO GAVAZZI



- High switching power
- Double switch
- Industrial applications
- 10A switching capacity
- Up to 500VAC
- Modular mounting (up to 3 elements)
- Screw terminals
- High reliability
- cULus and CE
- According to EN ISO 13850 (only NC slow action)
- IEC/EN 60947-5-1, IEC/EN 60947-5-5, UL 508

\* Not all configurations available – see page 5 for complete list

### Product description

Switching element equipped with two independent elements. Available in different switching configurations. Pole and throw configurations can be single pole single throw (SPST) or double pole single throw (DPST). Elements can be snapped to each other on the bottom, up to 3.

### Approvals



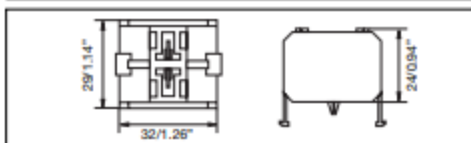
### Technical data

Contact resistance	≤50mΩ
Travel	5.8 ± 0.2mm (2.28" ± 0.08")
Rated insulation Voltage U <sub>i</sub>	660VAC/DC (acc. to IEC 60947-5-1) 600VAC/DC (acc. to UL508)
Rated imp. withstand voltage U <sub>imp</sub>	2500VAC 50Hz 1min.
Minimum switching power	
Min Current	100mA
Min Voltage	24V
Switch housing	PC
Contact parts	Cu
Contact material	
Standard	Hard silver
Optional	Gold/silver
Optional for aggressive atmospheres	Silver/palladium
Operating temperature	-25 to +70°C (-13 to +158°F)
Storage temperature	-30 to +80°C (-22 to +176°F)

### Terminals

<b>Screw terminals</b>	
Max. section single-core wire	2 x 2.5mm <sup>2</sup> (0.004sq.inch)
Max. section stranded wire	2 x 1.5mm <sup>2</sup> (0.002sq.inch)
Copper conductor wire	14 AWG @ 60°C or 75°C
	CU conductor
Terminal tightening torque	1.2Nm (10.6in.lb.)

### Dimensions mm/inches



### Ordering key

PA 2 110 / 1 \*

Type \_\_\_\_\_  
 Number of contacts \_\_\_\_\_  
 Contact code \_\_\_\_\_  
 Options ( 1 = Snap action  
 2 = Slow action with forced opening Ⓞ NC contact)

### Contact code

Contact configuration	Contact code
2 NO contacts (DPST)	200
2 NC contacts (DPST)	020
1 NC contact (SPST)	010
1 NO contact (SPST)	100
1 NC + 1 NO contacts (DPST)	110

### Contact characteristics

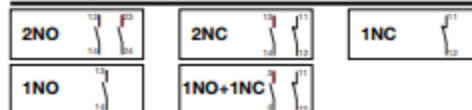
Contact Rating AC1	10A @ 250VAC		
Contact Rating	AC15	DC13	
(acc. to IEC 60947-5-1)	@ 24V 10A	6A	
	@ 110V 8A	1A	
	@ 220V 6A	0.5A	
	@ 380V 4A	-	
	@ 500V 2.5A	-	
<b>AC Contact Rating</b> (acc. to UL 508)	<b>A600</b>	<b>B600</b>	
<b>B600</b> (all snap codes)	@ 120V 6A	3A	
<b>A600</b> (all slow codes)	@ 240V 3A	1.5A	
	@ 480V 1.5A	0.75A	
	@ 600V 1.2A	0.6A	
<b>DC Contact Rating</b> (acc. to UL 508)	<b>Q600</b>	<b>Q300</b>	
<b>Q600</b> (all snap codes)	@ 125V 0.55A	0.55A	
<b>Q600</b> (100, 200 slow codes)	@ 250V 0.27A	0.27A	
<b>Q300</b> (010, 020, 110 slow codes)	@ 480V 0.10A	-	
	@ 600V 0.10A	-	

Contact rating code designation	Terminal pitch (mm)	Maximum current, amperes (acc. to UL508)								Maximum volt-amperes	
		120V		240V		480V		600V		Make	Break
A600	10	60	6.00	30	3.00	15	1.5	12	1.2	7200	720
B600	5	30	3.00	15	1.50	7.50	0.75	6	0.6	3600	360

Contact rating code designation	Terminal pitch (mm)	Maximum current, amperes (acc. to UL508)			Maximum make or break volt-amperes @ 300V or less
		125V	250V	301 to 600V	
Q600	2.5	0.55	0.27	0.10	69
Q300	2.5	0.55	0.27	-	69

### Wiring diagram



# AVAILABLE PORTFOLIO CONFIGURATIONS

## Flush Round Push Buttons

PB22BF0B	PB22BIF0Y
PB22BF0G	PB22SF0B
PB22BF0K	PB22SF0G
PB22BF0R	PB22SF0K
PB22BF0W	PB22SF0R
PB22BF0Y	PB22SF0Y
PB22BIF0B	PB22SIF0G
PB22BIF0G	PB22SIF0R
PB22BIF0R	PB22SIF1G
PB22BIF0W	

## Extended Push Buttons

PB22BE0G	PB22BIE0Y
PB22BE0K	PB22SIE0G
PB22BE0R	PB22SIE0R
PB22BIE0R	

## Red Emergency Stop Push Buttons

PB22BEM41R	PB22SEM41R
PB22BEM61R	PB22SEM61R
PB22BKEM41R	

## Mushroom Push Buttons

PB22BIM41R	PB22SM40K
PB22BM40G	PB22SM40R
PB22BM40R	PB22SM41G
PB22BM41R	PB22SM41R
PB22BM60R	PB22SPPM41R
PB22SIM40R	PB22SPPM61R
PB22SIM41R	

## Buzzer and Flashing Buzzer

PL22SBZK110	PL22SFBZR110
PL22SBZK12	PL22SFBZR12
PL22SBZK220A	PL22SFBZR220A
PL22SBZK24	PL22SFBZR24

## Two Color Pilot Lights

PL22STCRG110	PL22STCRG24
PL22STCRG220A	

## Pilot Lights

PL22CHLB110	PL22SFLG24
PL22CHLB24	PL22SFLR110
PL22CHLG110	PL22SFLR24
PL22CHLG24	PL22SFLW110
PL22CHLR110	PL22SFLW24
PL22CHLR24	PL22SFLY110
PL22CHLW110	PL22SFLY24
PL22CHLW24	PL22SHLG110
PL22CHLY110	PL22SHLG220A
PL22CHLY24	PL22SHLG24
PL22CLLB220A	PL22SHLR110
PL22CLLB24	PL22SHLR12
PL22CLLG110	PL22SHLR220A
PL22CLLG220A	PL22SHLR24
PL22CLLG24	PL22SHLW110
PL22CLLR110	PL22SHLW24
PL22CLLR220A	PL22SHLY110
PL22CLLR24	PL22SHLY24
PL22CLLW110	PL22SLLG110
PL22CLLW220A	PL22SLLG220A
PL22CLLW24	PL22SLLG24
PL22CLLY110	PL22SLLR110
PL22CLLY12	PL22SLLR220A
PL22CLLY220A	PL22SLLR24
PL22CLLY24	PL22SLLW24
PL22CRLB24	PL22SLLY24
PL22SFLB24	PL22SRLR110
PL22SFLG110	

## Short-Handle Selector Switches

PB22BSRS21K	PB22SISRS21W
PB22BSRS22K	PB22SISRS31G
PB22BSRS31K	PB22SSRS21K
PB22BSRS33K	PB22SSRS31K
PB22SISRS21R	PB22SSRS32K

## Long-Handle Selector Switches

PB22BLRS21K	PB22SLRS31K
PB22BLRS31K	PB22SLRS32K
PB22SLRS21K	

## I/O Push Buttons

PB22SIO0RG	PB22SIOL0RG
------------	-------------

## Key Selector Switches

PB22SKRS21KL	PB22SKRS21KR
--------------	--------------

## Push Button Boxes

PBBOX1HBG	PBBOX3HBY
PBBOX1HBY	PBBOX4HBG
PBBOX2HBG	PBBOX4HBY
PBBOX2HBY	PBBOX5HBG
PBBOX3HBG	

## Lamp Element

PALAMPB110	PALAMPR24
PALAMPB24	PALAMPW110
PALAMPG110	PALAMPW12
PALAMPG220A	PALAMPW24
PALAMPG24	PALAMPY110
PALAMPR110	PALAMPY24
PALAMPR220A	

## Contact Block

PA2010/1	PA2100/2
PA2010/2	PA2110/1
PA2020/1	PA2110/2
PA2020/2	PA2200/1
PA2100/1	PA2200/2

## Accessories

PASEALCOV	PAWP6
PAPBCOV	PAWP9
PAMR22	PAPHC22
PALBF11	PARR3
PALBF18	PAPLCONN

## Holders

PBMBM	PBMBP
PBMBN	