Panel Actuators and Indicators
Type PB
Extended Push Buttons

CARLO GAVAZZI

PB 22S

PB 22B

PB 30F

- Ø 22mm (Ø0.87") Standard and bezel style
- Ø 30mm (Ø1.18") Flush 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

c(UL)us LISTED 3MHG   CE   RoHS COMPLIANT

Types

E = Extended round
IE = Illuminated[1] extended round

[1] = Light function is obtained by the lamp element pg.19

Colours

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

Ordering key

PB 22S IE 0 R

Series
Dimension and Style
Type
Action
Colour

Dimensions and styles

22S = Ø22mm (Ø0.87") Standard style
22B = Ø22mm (Ø0.87") Bezel style
30F = Ø30mm (Ø1.18") Flush style

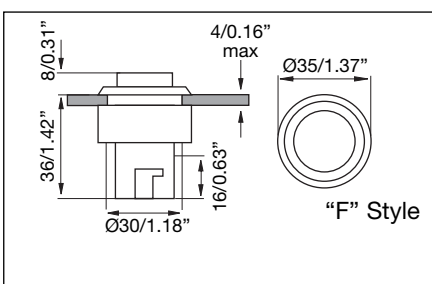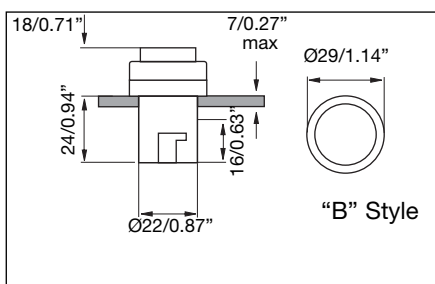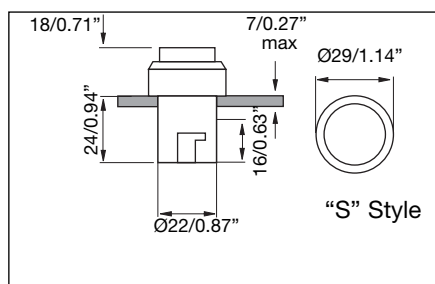## Actions

0 = Spring return
1 = Maintained

General data

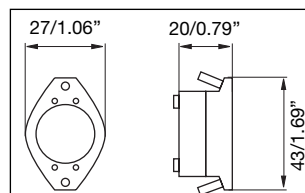| Peripheral of actuator	AL
Actuator	Pa
Mechanical life	≥3 x 10^6 cycles
Operating temperature	-25 to +70°C (-13 to +158°F)
Storage temperature	-30 to +80°C (-22 to +176°F)
Degree of protection	IP 65

Dimensions - Push Buttons mm/inches

18/0.71"   7/0.27" max   Ø29/1.14"
24/0.94"   16/0.63"
Ø22/0.87"   "S" Style

18/0.71"   7/0.27" max   Ø29/1.14"
24/0.94"   16/0.63"
Ø22/0.87"   "B" Style

8/0.31"   4/0.16" max   Ø35/1.37"
36/1.42"   16/0.63"
Ø30/1.18"   "F" Style

Specifications are subject to change without notice. Pictures are just an example. For special features and/or custumization, please ask to our sales network. 200808

Holders

	Holder type "M"			
	Code	**PB MB M**		27/1.06" 20/0.79" 43/1.69"
	Material	**Zn + PBT**		

	Holder type "P"			
	Code	**PB MB P**		30/1.18" 20/0.79" 31/1.22"
	Material	**PBT**		
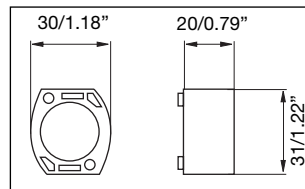
	Holder type "N"			
	Code	**PB MB N**		29/1.14" 23/0.91" 42/1.65"
	Material	**PC**		
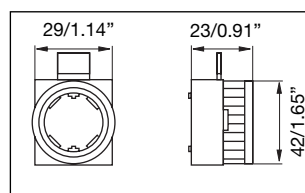
Lamp Element

Ordering key

PALAMP R 220A

Type
Colour
Voltage

Approvals

c (UL) us LISTED 3MHG   C E   **RoHS** COMPLIANT

Colours

R = Red
W = Clear/White
B = Blue

Y = Yellow
G = Green

Voltage

06	= 6VAC/DC	**110**	= 110VAC/DC
12	= 12VAC/DC	**220D**	= 220VDC
24	= 24VAC/DC	**220A**	= 220VAC
48	= 48VAC/DC	**380A**	= 380VAC

Technical data

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

Dimensions mm/inches

8/0.31"   36/1.42"   31/1.22"   29/1.14"   20/0.79"   16/0.63"
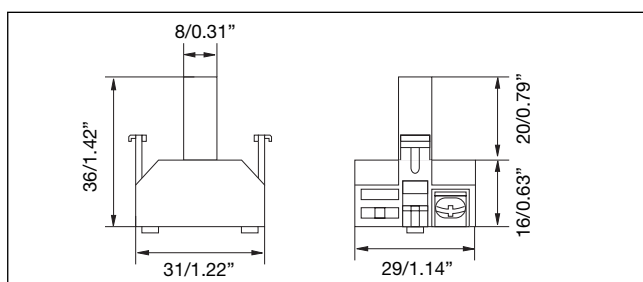
Panel Actuators and Indicators
Type PA2
Contact Block

- 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
- IEC/EN 60947-5-1, IEC/EN 60947-5-5, UL 508

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.

Ordering key

PA 2 110 / 1

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

Approvals

c(UL)us LISTED 3MHG   CE   RoHS COMPLIANT

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**

Terminals

Screw terminals

Max. section sigle-core wire	**2 x 2.5mm² (0.004sq.inch)**
Max. section stranded wire	**2 x 1.5mm² (0.002sq.inch)**
Copper conductor wire	**14 AWG**
Terminal tightening torque	**1.2Nm (10.6in.lb.)**

Contact characteristics

Contact Rating AC1	10A @ 250VAC	
Contact Rating (acc. to IEC 60947-5-1)	AC15	DC13
@ 24V	10A	6A
@ 110V	8A	1A
@ 220V	6A	0.5A
@ 380V	4A	-
@ 500V	2.5A	-

Thermal Contact Rating (acc. to UL 508)	10A (A600) 5A (B600) 2.5A (Q600/Q300)	
AC Contact Rating (acc. to UL 508)	A600	B600
B600 (all snap codes)		
A600 (all slow codes)		
@ 120V	6A	3A
@ 240V	3A	1.5A
@ 480V	1.5A	0.75A
@ 600V	1.2A	0.6A

DC Contact Rating (acc. to UL 508)	Q600	Q300
Q600 (all snap codes)		
Q600 (100, 200 slow codes)		
Q300 (010, 020, 110 slow codes)		
@ 125V	0.55A	0.55A
@ 250V	0.27A	0.27A
@ 480V	0.10A	-
@ 600V	0.10A	-

Technical data

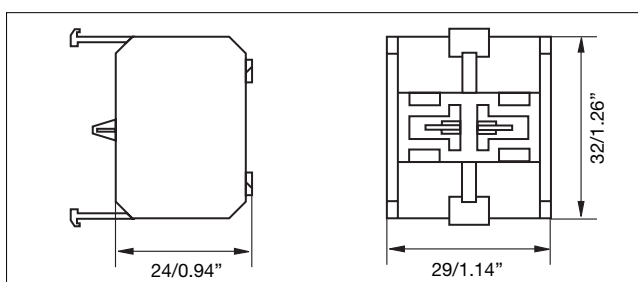|	
Contact resistance	≤50mΩ
Travel	5.8 ± 0.2mm (2.28” ± 0.08”)
Rated insulation Voltage U_i	660VAC/DC (acc. to IEC 60947-5-1) 600VAC/DC (acc. to UL508)
Rated imp. withstand voltage U_{imp}	2500VAC 50Hz 1min.
Minimum switching power Min Current Min Voltage	100mA 24V
Switch housing	PC
Contact parts	Cu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

Wiring diagram

2NO	13 23 / 14 24	2NC	13 11 / 14 12	1NC	11 / 12
1NO	13 / 14	1NO+1NC	13 11 / 14 12		

Dimensions mm/inches

24/0.94"   29/1.14"   32/1.26"
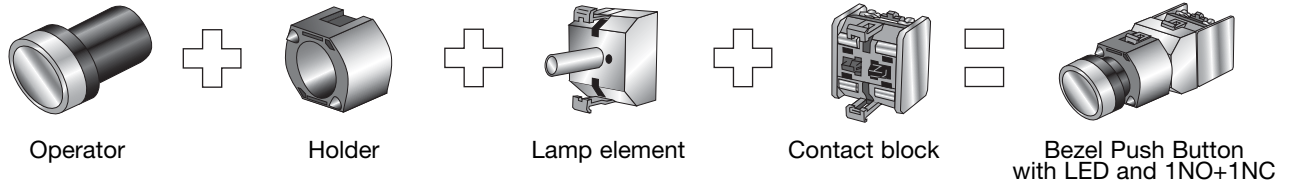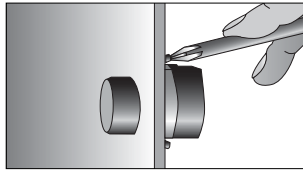
Assembling and Mounting

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).

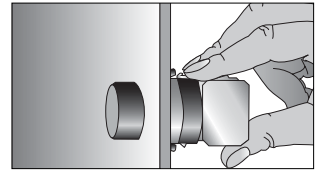| Operator | Holder | Lamp element | Contact block | Bezel Push Button with LED and 1NO+1NC |

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.
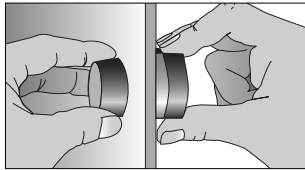
The operator will be inserted into the panel.   The holder will be secured at the back by two screws or nut.   The contact block is snapped on.

Accessories for Panel Actuators

Sealing cover IP67				
	Always on the head of operators, waterproof and dust, IP67.	Silicon rubber		**PA SEAL COV**
Shield				
	Always on the head of button, prevent strike and mistaking operation.	Stainless steel		**PA PB SHIELD**
Protection cover				
	Always on the head of button, prevent strike and mistaking operation. Lockable.	PC		**PA PB COV**
Terminal shield				
	Installed behind the wiring screws of the contact block to avoid electric shock.	PC		**PA 2 SHIELD**
Mounting ring Ø22mm (0.87")				
	Installed on plastic panel to strengthen mounting.	FE		**PA MR 22**
Mounting ring Ø25mm (0.98")				
	When the mounting hole is Ø25mm (0.98"), it should be add to the panel.	FE		**PA MR 25**
Front bezel set Ø30mm (1.18")				
	For Ø30mm (1.18") panel hole, to have a thinner effect.	AL		**PA FBZL 30**
Label frame				
	Hang it on the push button or pilot light, for symbol or text explanation.	PC	10mm/0.39"	**PA LBF 11**
			18mm/0.71"	**PA LBF 18**
Warning plate				
	For emergency stop push buttons. Thickness 1.5mm/0.059"	ABS	Ø60mm/Ø2.36"	**PA WP 6**
			Ø90mm/Ø3.54"	**PA WP 9**
Yellow protection ring				
	To protect button and to prevent strike or mistaking operation.	ABS	Ø40mm/Ø1.57"	**PA YPR 4**
		Rubber	Ø60mm/Ø2.36"	**PA YPR 6**
Panel hole cap Ø22mm (0.87")				
	For blocking up prepared or useless holes on the panels.	ABS		**PA PHC 22**
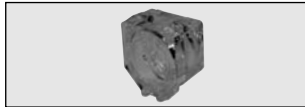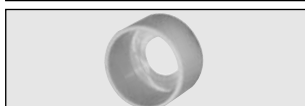
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