

Panel Actuators and Indicators

Type PB

Flush Round 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

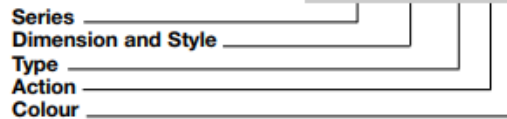
Product description

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.

Ordering key

PB 22S IF 0 R*



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

Approvals



Dimensions and styles

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

Types

F = Flush round
IF = Illuminated¹ flush round

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

Actions

0 = Spring return
1 = Maintained

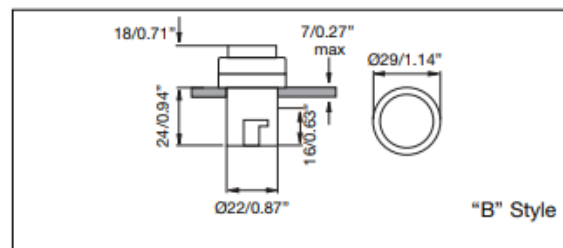
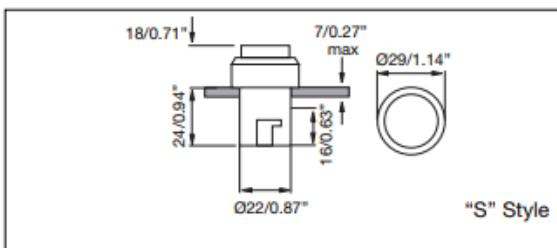
Colours

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

General data

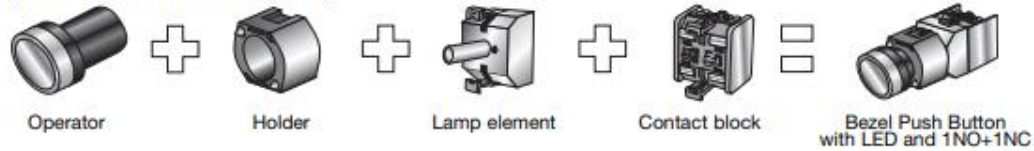
Peripheral of actuator	AL
Actuator	Pa
Mechanical life	≥3 x 10 ⁶ cycles
Operating temperature	-25 to +70°C (-13 to +158°F)
Storage temperature	-30 to +80°C (-22 to +176°F)
Degree of protection	IP 65

Dimensions - Push Buttons mm/inches



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).



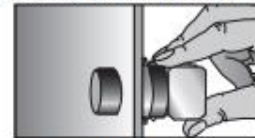
To install it, the only tool needed is a screwdriver. The same used to wiring the contact block can be used to fix the push-button.



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" 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



Panel hole cap Ø22mm (0.87")

For blocking up prepared or useless holes on the panels. ABS

PA PHC 22



Holders

	Holder type "M" Code Material	PB MB M Zn + PBT	
	Holder type "P" Code Material	PB MB P PBT	
	Holder type "N" Code Material	PB MB N PC	

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

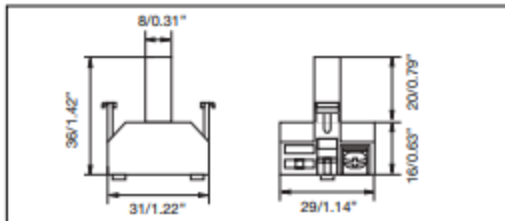
Voltage

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	±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



Wiring Notes

- 1) Use 60°C or 75°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



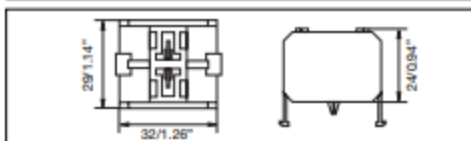
Technical data

Contact resistance	≤50mΩ
Travel	5.8 ± 0.2mm (2.28" ± 0.08")
Rated insulation Voltage U _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	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

Screw terminals	
Max. section single-core wire	2 x 2.5mm ² (0.004sq.inch)
Max. section stranded wire	2 x 1.5mm ² (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

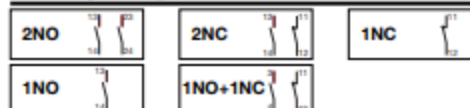
Contact configuration	Contact code
2 NO contacts (DPST)	200
2 NC contacts (DPST)	020
1 NC contact (SPST)	010
1 NO contact (SPST)	100
1 NC + 1 NO contacts (DPST)	110

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	-	
AC Contact Rating (acc. to UL 508)	A600	B600	
B600 (all snap codes)	@ 120V 6A	3A	
A600 (all slow codes)	@ 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)	@ 125V 0.55A	0.55A	
Q600 (100, 200 slow codes)	@ 250V 0.27A	0.27A	
Q300 (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	69					
Q300	2.5	0.55	0.27	-	-	69					

Wiring diagram



AVAILABLE PORTFOLIO CONFIGURATIONS

Flush Round Push Buttons		Pilot Lights		I/O Push Buttons	
PB22BF0B	PB22BIF0Y	PL22CHLB110	PL22SFLG24	PB22SIO0RG	PB22SIOL0RG
PB22BF0G	PB22SF0B	PL22CHLB24	PL22SFLR110		
PB22BF0K	PB22SF0G	PL22CHLG110	PL22SFLR24	Key Selector Switches	
PB22BF0R	PB22SF0K	PL22CHLG24	PL22SFLW110	PB22SKRS21KL	PB22SKRS21KR
PB22BF0W	PB22SF0R	PL22CHLR110	PL22SFLW24		
PB22BF0Y	PB22SF0Y	PL22CHLR24	PL22SFLY110	Push Button Boxes	
PB22BIF0B	PB22SIF0G	PL22CHLW110	PL22SFLY24	PBBOX1HBG	PBBOX3HBY
PB22BIF0G	PB22SIF0R	PL22CHLW24	PL22SHLG110	PBBOX1HBY	PBBOX4HBG
PB22BIF0R	PB22SIF1G	PL22CHLY110	PL22SHLG220A	PBBOX2HBG	PBBOX4HBY
PB22BIF0W		PL22CHLY24	PL22SHLG24	PBBOX2HBY	PBBOX5HBG
		PL22CLLB220A	PL22SHLR110	PBBOX3HBG	
		PL22CLLB24	PL22SHLR12		
Extended Push Buttons		PL22CLLG110	PL22SHLR220A	Lamp Element	
PB22BE0G	PB22BIE0Y	PL22CLLG220A	PL22SHLR24	PALAMPB110	PALAMPR24
PB22BE0K	PB22SIE0G	PL22CLLG24	PL22SHLW110	PALAMPB24	PALAMPW110
PB22BE0R	PB22SIE0R	PL22CLLR110	PL22SHLW24	PALAMPG110	PALAMPW12
PB22BIE0R		PL22CLLR220A	PL22SHLY110	PALAMPG220A	PALAMPW24
		PL22CLLR24	PL22SHLY24	PALAMPG24	PALAMPY110
Red Emergency Stop Push Buttons		PL22CLLW110	PL22SLLG110	PALAMPR110	PALAMPY24
PB22BEM41R	PB22SEM41R	PL22CLLW220A	PL22SLLG220A	PALAMPR220A	
PB22BEM61R	PB22SEM61R	PL22CLLW24	PL22SLLG24		
PB22BKEM41R		PL22CLLY110	PL22SLLR110	Contact Block	
		PL22CLLY12	PL22SLLR220A	PA2010/1	PA2100/2
		PL22CLLY220A	PL22SLLR24	PA2010/2	PA2110/1
Mushroom Push Buttons		PL22CLLY24	PL22SLLW24	PA2020/1	PA2110/2
PB22BIM41R	PB22SM40K	PL22CRLB24	PL22SLLY24	PA2020/2	PA2200/1
PB22BM40G	PB22SM40R	PL22SFLB24	PL22SRLR110	PA2100/1	PA2200/2
PB22BM40R	PB22SM41G	PL22SFLG110			
PB22BM41R	PB22SM41R	Short-Handle Selector Switches			
PB22BM60R	PB22SPPM41R	PB22BSRS21K	PB22SISRS21W		
PB22SIM40R	PB22SPPM61R	PB22BSRS22K	PB22SISRS31G	Accessories	
PB22SIM41R		PB22BSRS31K	PB22SSRS21K	PASEALCOV	PAWP6
		PB22BSRS33K	PB22SSRS31K	PAPBCOV	PAWP9
		PB22SISRS21R	PB22SSRS32K	PAMR22	PAPHC22
		Long-Handle Selector Switches		PALBF11	PARR3
		PB22BLRS21K	PB22SLRS31K	PALBF18	PAPLCONN
		PB22BLRS31K	PB22SLRS32K		
		PB22SLRS21K		Holders	
Two Color Pilot Lights				PBMBM	PBMBP
PL22STCRG110	PL22STCRG24			PBMBN	
PL22STCRG220A					