

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 = Illuminated¹ extended round

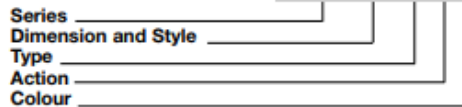
¹ = Light function is obtained by the lamp element pg.19

Colours

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

Ordering key

PB 22S IE 0 R *



* 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

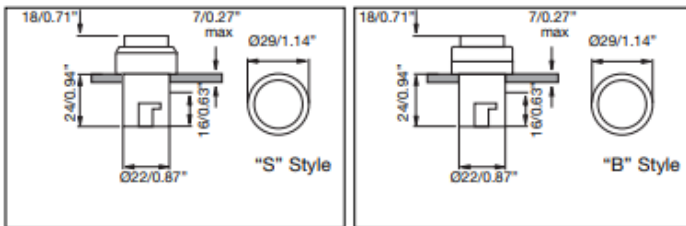
Actions

0 = Spring return

General data

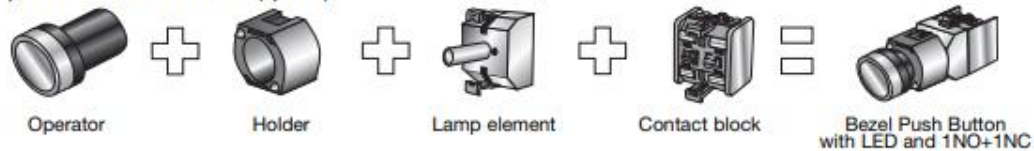
| | |
|------------------------|------------------------------|
| Peripheral of actuator | AL |
| Actuator | Pa |
| Mechanical life | ≥3 x 10 ⁶ cycles |
| Operating temperature | -25 to +70°C (-13 to +158°F) |
| Storage temperature | -30 to +80°C (-22 to +176°F) |
| Degree of protection | IP 65 |

Dimensions - Push Buttons mm/inches

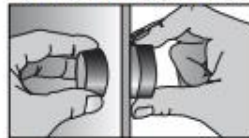


Assembling and Mounting

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).



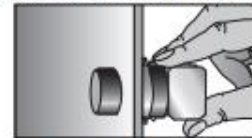
To install it, the only tool needed is a screwdriver. The same used to wiring the contact block can be used to fix the push-button.



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




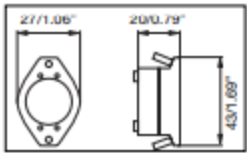

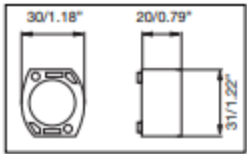

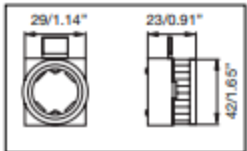
Panel hole cap Ø22mm (0.87")

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

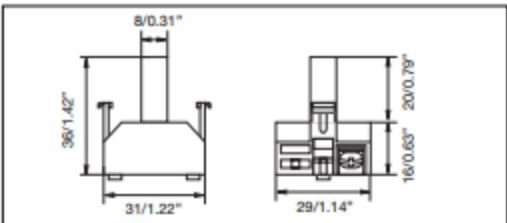
Voltage

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 | $\pm 20\%$ |
| 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°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



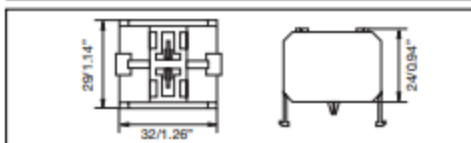
Technical data

| | |
|---|--|
| 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

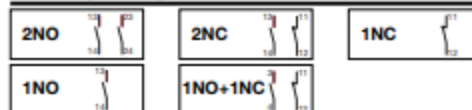
| Contact configuration | Contact code |
|-----------------------------|--------------|
| 2 NO contacts (DPST) | 200 |
| 2 NC contacts (DPST) | 020 |
| 1 NC contact (SPST) | 010 |
| 1 NO contact (SPST) | 100 |
| 1 NC + 1 NO contacts (DPST) | 110 |

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/inches) | 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/inches) | 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

| | |
|-----------|-----------|
| 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 | |

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