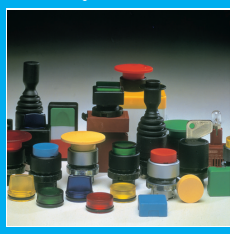
GE Industrial Systems

# C2000™ - P9 SERIES
# 22 mm Pushbuttons
# Control and pilot units

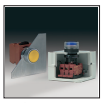


### Shape, material and colours

The P9 line offers three types of operators:
- round in satin chrome metal
- round in engineered thermoplastic
- square in engineered thermoplastic

Modern ergonomic P9 actuators are available in a wide variety of colours and styles, and are the result of superior industrial design experience.

SERIES P9 satisfies any sophisticated industrial applications.

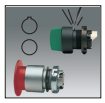


### Mounting system

The P9 line offers a wide variety of operators, contact blocks and power supplies for panel mounting.

Furthermore a range of operators, contact blocks and power supplies are available for base mounting.

The base mounting option is simple thanks to plastic enclosures fitted with a standard mounting adaptor, which allows a snap-on and secure fastening.



### Fitting and positioning

All the P9 operators are fitted with seal to ensure IP66 degree of protection.

A locating tab on the operator allows the correct positioning on panels with holes drilled according to CENELEC EN 50007 standards (with notch).

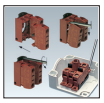
The tab also ensures panel stability and prevents unwanted rotations.

The tab can be removed with a screwdriver for applications in holes without notch.

### Rear locking and back mounting procedure

P9 operators are back mounted to the panel by a patented locking ring. The units can be assembled using a standard screwdriver.

As an option, an assembly wrench is available.



### Fast mounting

All the P9 line panel devices are snap-on.

Mounting between panel and operator is accomplished by means of a patented snap-on flange which ensures a fast fitting.

For base mounting, the fitting is done directly on the adaptor inside the enclosures base.

Each single block can be mounted or removed individually.

In panel mounting, it is also possible to install or remove the snap-on mounting flange with the contact block group.

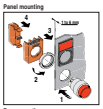
Blocks and/or flange can be disassembled by a standard screwdriver, to simplify operations.

### Safety and reliability

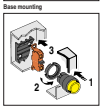
The P9 contact blocks are designed to ensure maximum reliability in every condition and to monitor control circuits at low energy levels (12V-5mA minimum), thanks to advanced "wiping" contacts:
- four contact points
- high-efficiency self-cleaning operation
- silver contacts, properly shaped
- high-control pressure.

## Technical data

**Panel mounting**

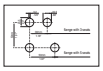



**Base mounting**




**Mounting**

Drilled for panels 1 to 6 mm thick with holes drilled according to CENELEC EN 50007 standards.




**Compliance with standards**

IEC 947-5-1 - VDE 0660 - NF-C20-140
CEI EN 609471-1 - UTE - BS5
NEMA - CENELEC EN 50007

**Approvals**

UL (U.S.A.) - CSA (Canada) - RINA (I) - Lloyd's Register of Shipping (U.K.) - Bureau Veritas (F)

**Climatic protections**

The standard versions are suitable for use in the following climates:
- Damp heat, cyclic cat. 2(Z/D) (DIN 50014)
- Wet climate cat. 2(AD) (DIN 50015)
- Hot wet climate cat. 4(SE2) (DIN 50015)
- Variable wet climate cat. FW(SA (DIN 50016)

**Temperature ranges**
- Operation: from – 25°C up to + 70°C
- Storage: from – 40°C up to + 70°C

**Degree of protection of the operators**

IP66 according to CENELEC EN 60529 when they are mounted into enclosures with the same or a higher degree of protection.
IP66 according to IEC recommendations NEMA type 1-2-3R-3S-4-4X-12-13 according to UL 508.

**Degree of protection of the terminals**

IP20c according to CENELEC EN 60529

**Shock resistance**
**(according to MIL 202 B method 202 A)**

1/2 sinusoid 11 ms
No damage on disassembling at 100 G for all devices (except for the illuminated operators with transformer 30 G).

**Vibration resistance**
**(according to IEC 68-2-6)**

16 G with frequency range from 40 to 500 Hz and maximum shifting 0.75 mm. (peak-to-peak).

**Rated insulation voltage**

690 V according to EN 60947.1

**Impulse withstand voltage**

4 kV according to EN 60947.1

**Electric shock protection**
- Class I according to IEC 536 for metal operators
- Class II (double insulation) according to IEC 536 for plastic operators.

**Short-circuit protection**

With fuses type gG of 16A according to IEC 269.1 and 269.3.

**Performances of the contacts**
- Slow action
- Self-cleaning sliding
- NC "positive opening"
- Double movable contact
- Four switching points
- Double break.

**Electrical resistance of the contact**

≤ 25 m Ω according to IEC 255, cat 3

**Identification of the terminals**

According CENELEC EN 50013

**Electrical performances**

| Rated thermal current Ith = 10A | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Performances according IEC 947.5.1 | | | | | | | | | |
| Category AC15 | | | | | | | | | |
| Voltage (Ue) [V] | 24 | 48 | 60 | 110 | 220 | 380 | 500 | 600 | |
| Current in (A) | 10 | 10 | 10 | 6 | 3 | 2 | 1.5 | 1.2 | |
| Category DC 13 | | | | | | | | | |
| Voltage (Ue) [V] | 24 | 48 | 60 | 110 | 220 | 300 | | | |
| Current in (A) | 2.5 | 1.4 | 1 | 0.55 | 0.27 | 0.2 | | | |
| Performances according to CSA C22.2 | | | | | | | | | |
| AC/Heavy Duty (A600) - DC/Standard Duty (Q300) | | | | | | | | | |

**Minimum operating range**

**Electrical life**

Alternate current 50-60 Hz cat. AC15

Direct current cat. DC 13

## Common accessories

**Bulbs BABs**

| Filament type | Vn | Wn | | |
|---|---|---|---|---|
| | 6 | 0.6 | BA9S06 | 2.00 |
| | 6 | 1.5 | BA9S015 | 2.00 |
| | 24 | 3 | BA9S242 | 3.00 |
| | 30 | 2.1 | BA9S30 | 2.00 |
| | 60 | 1.2 | BA9S6012 | 3.00 |
| | 130 | 2 | BA9S130 | 3.00 |

| Multi led Vn AC/DC ± 10% | | | |
|---|---|---|---|
| | 6 | BA9S6L● | 18.00 |
| | 24 | BA9S24L● | 18.00 |
| | 48 | BA9S48L● | 18.00 |
| | 110 | BA9S110L● | 18.00 |

| Colour | Red | Green | Yellow |
|---|---|---|---|
| ● | R | G | Y |

**Insert holders**

Supplied with neutral insert engravable on both sides
Standard 30 x 50 mm

PIA4TBS 1.00 PIA4TBS 2.00

**Round plates**

**For emergency push-buttons** (yellow background) **diameter 58 mm**

Emergency Stop | 0609TGR02 2.00

**Plugs**

| | | | |
|---|---|---|---|
| Round | PIA9IPR 5.00 | – | |
| Square 30 x 30 mm | – | PIA9IHP3 | 5.00 |
| Rectangular 30 x 50 mm | – | PIA9IPS | 5.00 |

**Tools**

| | | |
|---|---|---|
| Locking ring wrench | PIACWAF | 7.50 |
| Bulb extractor | 9999EL | 4.00 |
| Extractor for caps and lenses | PIA9EXG | 7.00 |

## Push-button stations

**Empty versions in thermoplastic IP66**

Light grey coloured
Panel or base mounted

Cover with holes
Knockouts conduit entry

| No. of holes | | |
|---|---|---|
| 1 (yellow cover) | PIEPEG1 | 15.00 |
| 1 | PIEPEB1 | 15.00 |
| 2 | PIEPEB2 | 17.50 |
| 3 | PIEPEB3 | 20.00 |
| 4 | PIEPEB4 | 22.50 |
| 6 | PIEPEB6 | 49.00 |

**Accessories**

**Write-on plates**

Bilaminated, self adhesive, 20 x 20 mm
Black background engravable for white texts

| | | | |
|---|---|---|---|
| Without text | | PIA9LN | 0.50 |
| With text (1) | START | PIA9LN030 | 1.00 |
| | STOP | PIA9LN031 | 1.00 |
| | FORWARD | PIA9LN014 | 1.00 |
| | REVERSE | PIA9LN015 | 1.00 |
| | CLOSE | PIA9LN035 | 1.00 |
| | OPEN | PIA9LN036 | 1.00 |
| | UP | PIA9LN034 | 1.00 |
| | DOWN | PIA9LN033 | 1.00 |
| | LEFT | PIA9LN032 | 1.00 |
| | RIGHT | PIA9LN024 | 1.00 |
| (1) Other languages on request | | | |
| With symbols | I | PIA9LN039 | 1.00 |
| | II | PIA9LN038 | 1.00 |
| | 0 | PIA9LN037 | 1.00 |
| | 0 | PIA9LN035 | 1.00 |
| | III | PIA9LN038 | 1.00 |
| | 0-I | PIA9LN039 | 1.00 |
| | I-II-0 | PIA9LN040 | 1.00 |
| Earth terminal clamp | | PIA9EMT | 1.00 |

**Empty versions in aluminium alloy**

Grey coloured RAL 7012 - Panel mounting

**Cover with holes**

| No. of holes | | |
|---|---|---|
| 1 | 0909TP1 | 20.00 |
| 1 | 0909TP1M | 20.00 |
| 2 | 0909TP2 | 30.00 |
| 2 | 0909TP2M | 42.00 |
| 3 | 0909TP3 | 40.00 |
| 4 | 0909TP4 | 51.00 |
| 4 | 0909TP4M | 61.00 |
| 6 | 0909TP6 | 83.00 |
| 8 | 0909TP8 | 83.00 |
| 12 | 0909TP12 | 83.00 |
| 16 | 0909TP16 | 113.00 |
| 24 | 0909TP24 | 143.00 |

**Equipped versions in thermoplastic IP66**

**One unit**

(Request pricing from local GE sales engineer)

| Operators | Colour | Diagram | Nameplt. | |
|---|---|---|---|---|
| Flush push-button | green | | | PIEPA0Y02 |
| Flush push-button | white | | | PIEPA01Y03 |
| Flush push-button | red | | | PIEPA01Y04 |
| Flush push-button | black | | | PIEPA01Y05 |
| Emergency push-button with latch according to EN418 (on yellow cover) | red | | | PIEPA21Y01 |
| Flush push-buttons | white | | | |
| | black | | | PIEPA21Y05 |
| Key selector switch with 2 pos. | – | | | PIEPA21Y06 |

**Two units**

(Request pricing from local GE sales engineer)

| Operators | Colour | Diagram | Nameplt. | |
|---|---|---|---|---|
| Flush push-buttons | green | | | |
| | red | | | PIEPA02Y01 |
| Flush push-buttons | white | | | |
| | black | | | PIEPA02Y02 |

**Three units**

(Request pricing from local GE sales engineer)

| Operator | Colour | Diagram | Nameplt. | |
|---|---|---|---|---|
| Full voltage pilot light BA9S max 28/34/28W not incl. | white | | | PIEPA21Y31 |
| | black | | | |
| Flush push-buttons | green | | | PIEPA21Y63 |
| | red | | | |
| Full voltage pilot light BA9S max 28/34/28W not incl. | white | | | PIEPA21Y33 |
| | black | | | |
| Flush push-buttons | white | | | PIEPA21Y65 |
| | black | | | |
| Resistor + diode pilot light 230/240V AC BA9S 130V-20W incl. | white | | | PIEPA22Y13 |
| | black | | | |
| Flush push-buttons | green | | | PIEPA21Y63 |
| | red | | | |
| Resistor + diode pilot light 230/240V AC BA9S 130V-20W incl. | white | | | PIEPA22Y04 |
| | black | | | |
| Flush push-buttons | white | | | PIEPA21Y65 |
| | black | | | |
| Flush push-buttons | black | | | PIEPA21Y05 |
| | red | | | |
| | black | | | |

The catalogue numbers in **bold** are available from stock.

Customised versions on request.

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