

Control and signalling units



Control and signalling units

Main features



Shape, material and colours

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

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

The series satisfies any sophisticated industrial applications.



Mounting system

The 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 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.

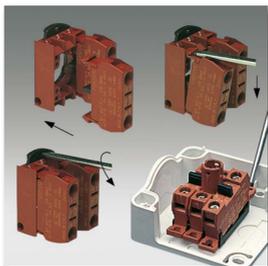
The tab can be removed with a screwdriver for applications in holes without notch.



Rear locking and back mounting procedure

The 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 rear 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 contact blocks are designed to ensure maximum reliability in every condition and to monitor control circuits at low energy levels (12V-5mA minimum).



Electrical units



Control and signalling units

Main features

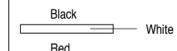
Common accessories

| Bulbs | | | |
|---------------|----------------|-----|-------|
| filament type | Vn | Wn | BA006 |
| | 6 | 0.6 | BA106 |
| | 6 | 1.5 | BA012 |
| | 12 | 2 | BA024 |
| | 24 | 2 | BA030 |
| | 30 | 2.1 | BA048 |
| | 48 | 2 | BA060 |
| | 60 | 1.2 | BA130 |
| multi-LED | Vn AC/DC ± 10% | | BM06* |
| | 6 | | BM12* |
| | 12 | | BM24* |
| | 24 | | BM48* |
| | 48 | | BM11* |
| | 110 | | |

LED colour ■ ■ ■ ■

Insert holders

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



Round plates

For emergency push-buttons (yellow cover)
diameter 59 mm

| | |
|-----------------|-------|
| Neutral | GKS0C |
| Emergenza | GKSIC |
| Emergency Stop | GKSEC |
| Arrêt d'urgence | GKSEC |
| Not - Aus | GKSDC |



Plugs

| | | |
|-----------------|-------|-------|
| Round | BRHPR | - |
| Square 30x30 mm | - | BSPH3 |

Flange

| | |
|----------------|-------|
| for 3 contacts | BTFC3 |
| for 5 contacts | BTFC5 |

Tools

Locking ring wrench
Bulb extractor
Extractor for caps and Irnses



Control and signalling units

Push-buttons stations

Push-buttons 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) | BIG1 |
| 1 | BI01 |
| 2 | BI02 |
| 3 | BI03 |
| 4 | BI04 |
| 6 | BI06 |

Empty versions in aluminium alloy

Grey coloured RAL 7012
Panel mounting



No. of holes

| | |
|----|--------|
| 1 | BMDG1 |
| 1 | BMDM1 |
| 2 | BMDG2 |
| 2 | BMDM2 |
| 3 | BMDG3 |
| 4 | BMDG4 |
| 4 | BMDM4 |
| 6 | BMDG6 |
| 8 | BMDG8 |
| 12 | BMDG12 |
| 18 | BMDG18 |
| 24 | BMDG24 |
| 35 | BMDG35 |

Equipped versions in thermoplastic IP66 - 1 unit



| Operator | Colour | Diagram | Namepl. |
|-----------------------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------|---------|
| Flush push-buttons | green | $\begin{matrix} \diagup 3 \\ \diagdown 4 \end{matrix}$ | I |
| Flush push-buttons | white | $\begin{matrix} \diagup 4 \\ \diagdown 1 \end{matrix}$ | I |
| Flush push-buttons | red | $\begin{matrix} \diagup 1 \\ \diagdown 2 \end{matrix}$ | 0 |
| Flush push-buttons | black | $\begin{matrix} \diagup 2 \\ \diagdown 0 \end{matrix}$ | 0 |
| Emergency push-buttons with latch EN418 (on yellow cover) | red | $\begin{matrix} \diagup 1 \\ \diagdown 2 \end{matrix}$ | 0 |
| Key selector switch with 2 positions | - | $\begin{matrix} \diagup 1 \\ \diagdown 2 \end{matrix} \begin{matrix} \diagup 3 \\ \diagdown 4 \end{matrix}$ | 0 - I |

Equipped versions in thermoplastic IP66 - 2 units



| Operator | Colour | Diagram | Namepl. |
|--------------------|--------|-------------------------------------------------------------------------------------------------------------|---------|
| Flush push-buttons | green | $\begin{matrix} \diagup 3 \\ \diagdown 4 \end{matrix}$ | I |
| Flush push-buttons | red | $\begin{matrix} \diagup 1 \\ \diagdown 2 \end{matrix}$ | 0 |
| Flush push-buttons | white | $\begin{matrix} \diagup 1 \\ \diagdown 2 \end{matrix}$ | I |
| Flush push-buttons | black | $\begin{matrix} \diagup 1 \\ \diagdown 2 \end{matrix} \begin{matrix} \diagup 3 \\ \diagdown 4 \end{matrix}$ | 0 |

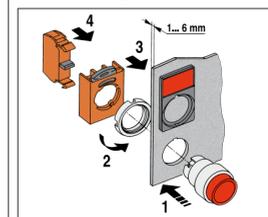
Equipped versions in thermoplastic IP66 - 3 units



| Operator | Colour | Diagram | Namepl. |
|----------------------|--------|--------------------------------------------------------|---------|
| Flush push-buttons | green | $\begin{matrix} \diagup 3 \\ \diagdown 4 \end{matrix}$ | I |
| Flush push-buttons | red | $\begin{matrix} \diagup 1 \\ \diagdown 2 \end{matrix}$ | 0 |
| Flush push-buttons | green | $\begin{matrix} \diagup 3 \\ \diagdown 4 \end{matrix}$ | II |
| Pilot light | green | $\begin{matrix} \diagup 3 \\ \diagdown 4 \end{matrix}$ | I |
| Indicatore luminoso | white | $\begin{matrix} \diagup 3 \\ \diagdown 4 \end{matrix}$ | I |
| Pulsante con guardia | red | $\begin{matrix} \diagup 1 \\ \diagdown 2 \end{matrix}$ | 0 |

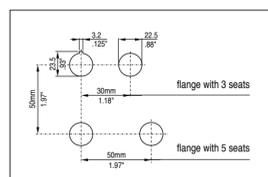
Technical data

Panel mounting

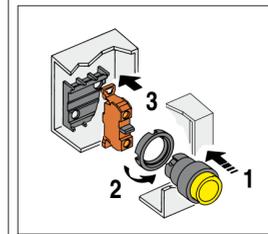


Mounting

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



Base mounting



Compliance with standards

IEC 947.5.1 - VDE 0660 - NF-C63140
CEI EN 60947.5.1 - UTE - BSI
NEMA - CENELEC EN 50007

Approvals

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

Temperature range

- Operation : from -25°C up to +70°C
- Storage : from -40°C up to +70°C

Climatic protections

The standard versions are suitable for use in the following climates:

- Temperate climate cat. 23/50 (DIN 50014)
- Wet climate cat. 23/83 (DIN 50015)
- Hot wet climate cat. 40/92 (DIN 50015)
- Variable wet climate cat. FW24 (DIN 50016)

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.
Suitable for using into enclosures NEMA type 1-3-3R-3S-4-4X-12-13 according to UL 508.

Degree of protection of the terminals

IP2x according to CENELEC EN 60529

Shock resistance

(according to MIL 202 B method 202 A)
1/2 sinusoid 11 ms:
No damage or disassembling at 100 G for all devices (except for the illuminated operators with transformer 38 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 16 A 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 = 10 A
Performances according IEC 947.5.1

Category AC15

Ue (V) 24 48 60 110 220 380 500 600

Ie (A) 10 10 10 6 3 2 1.5 1.2

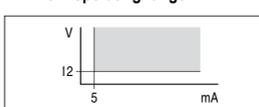
Category DC 13

Ue (V) 2.5 1.4 1 0.55 0.27 2

Ie (A) 2.5 1.4 1 0.55 0.27 2

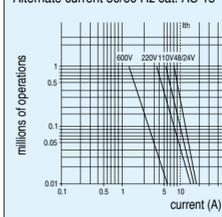
Performances according to CSA and UL AC/Heavy Duty (A600) - DC/Standard Duty (Q300)

Minimum operating range

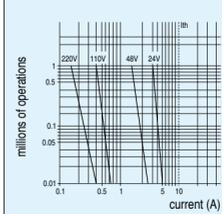


Electrical life

Alternate current 50/60 Hz cat. AC 15



Direct current cat. DC 13



Max number of contacts

| | Flange | |
|---------------------------------------------|---------------------|---------------------|
| | Standard 3 contacts | Optional 5 contacts |
| Push-buttons | max 6 | max 8 |
| Push-buttons (mushroom head) | max 6 | max 8 |
| Emergency push-buttons (with lever) | max 6 | max 8 |
| Selector switch | max 4 | max 8 |
| Selector switch (with key) | max 4 | max 8 |
| Joystick | max 4 | - |
| Selector switch (with key) | max 4 | - |
| Selector switch | max 4 | - |
| Emergency push-buttons push pull to release | max 2 | - |
| Push-buttons 3 positions (mushroom head) | max 2 | - |
| Illuminated push-buttons (mushroom head) | max 4 | max 4 |
| Illuminated push-buttons (mushroom head) | max 4 | max 4 |
| Illuminated selector switch (mushroom head) | max 4 | max 4 |
| Illuminated push-buttons (mushroom head) | max 2 | max 2 |
| Illuminated push-buttons (mushroom head) | max 2 | max 2 |
| Illuminated push-buttons (mushroom head) | max 2 | max 2 |

