













Control and Signaling Units





Table of Contents

Page

Specifications	3
Constructions Characteristics	3
Ordering Guide	4
 Pushbutton	5
 Double Pushbutton	6
 Emergency (Mushroom Head)	6
 Selector	7
 Illuminated Pushbutton	8
 Illuminated Selector	8
 Pilot Lights	8
 Joystick	9
 Contact Block	10
 Power Supply	10
 Bulbs	10
 Accessories	11
Dimensions	12

- Control and signaling units for low voltage circuits
- Thermoplastic sturdy construction
- Round bezel (ø22 and ø30mm holes) and square (ø22mm holes)
- Pushbuttons, emergency, selectors and joysticks type operators
- Illuminated pushbuttons and selectors and pilot lights
- Positive opening of the NC contact \rightarrow (IEC 60947-5-1)
- Screw terminals with retractable clamps



Specifications

Utilization Category (IEC 60947-5-1)	AC-15	DC-13
Rated Operational Voltage (Ue)	240V	125V
Rated Operational Current (Ie)	3A	0,22A
Conventional Free Air Thermal current (Ith)	10A	1A
Rated Insulation Voltage (Ui)	300V	
Contact Resistance	50mΩ maximum initial (in 1A 5Vdc)	
Ambient Temperature	+70°C maximum	
Contact Type	Slow action with positive opening of the NC contact \rightarrow	
	Options:	1NO 1NC 1NO+1NC 2NO 2NC
Terminals	Screw terminals with retractable clamp, with insulating protection against electric shocks	
Wiring Cables	0.32mm ² (22AWG) min. to 3.3 mm ² (12AWG) max.	
Mechanical Life	3.000.000 cycles for pushbuttons and emergency	
	1.000.000 cycles for selector	
	500.000 cycles for latched emergency, toggle switch and joystick	
Electrical Life	200.000 cycles	
Degree of Protection	IP65 (IP40 for double pushbutton and illuminated selector) (IEC 60529) ①	
Panel Thickness	1 to 6mm (the thickness variation is compensated by turning the fixing nut)	

① Some models may have the degree of protection raised to IP68. See: Accessories - Protecting Cap (page 11).

Construction characteristics

Series C modular system comprises a group of products designed for the command and signaling of low power ac and dc electrical circuits.

It is offered in 3 versions:
(bezel in black)















- Round bezel units for mounting in ø22.5mm holes
- Round bezel units for mounting in ø30.5mm holes
- Square bezel units for mounting in ø22.5mm holes

Final product comprises 2 parts that must be separately ordered: Actuator and Component.

Actuator is the element that defines the command to be executed, while the Component realizes it, being a contact element, a power supply unit or a combination of both.

The flange is an intermediate element coupling the Actuator to the Component and fastened to the Actuator.

Ordering Guide







TO ORDER	PLEASE, ACQUIRE
Pushbutton Protected Pushbutton Extended Pushbutton Emergency Selector Switch Toggle Switch Selector	 +  ^① +  ^② +  ^②
Double Pushbutton	 +  (if exists) + 
Illuminated Pushbutton Illuminated Selector	 +  +  ^① +  ^②
Pilot Lights	 + 
Joystick	

Subject to change without prior notice

① Maintained contact element is an element that can be added before contact block, having the purpose of maintaining the contact in the toggled position, until actuator is operated a second time.

② It is not recommended the mounting of more than two contact elements, one overlapping the other.

Pushbutton

		Color	ø22	ø30	ø 22
Flush  <p>Pushbutton flush mount, spring return.</p> <p>Cap color option; round or square bezel in the black option. Call for special colors, legends or symbols.</p>	Red	C2XBNR	C3XBNR	C4XBNR	
	Green	C2XBNV	C3XBNV	C4XBNV	
	Yellow	C2XBNA	C3XBNA	C4XBNA	
	Black	C2XBNP	C3XBNP	C4XBNP	
	White	C2XBNB	C3XBNB	C4XBNB	
	Blue	C2XBNZ	C3XBNZ	C4XBNZ	
	Extended  <p>Pushbutton flush mount, spring return and extended cap.</p> <p>Cap color option; round or square bezel in the black option. Call for special colors, legends or symbols.</p>	Red	C2XBER	C3XBER	C4XBER
Green		C2XBEV	C3XBEV	C4XBEV	
Yellow		C2XBEA	C3XBEA	C4XBEA	
Black		C2XBEP	C3XBEP	C4XBEP	
White		C2XBEB	C3XBEB	C4XBEB	
Blue		C2XBEZ	C3XBEZ	C4XBEZ	
Extended 29mm  <p>Pushbutton flush mount, spring return and extended cap.</p> <p>Cap color option; round or square bezel in the black option. Call for special colors, legends or symbols.</p>		Red	C2XE3R	C3XE3R	C4XE3R
	Green	C2XE3V	C3XE3V	C4XE3V	
	Yellow	C2XE3A	C3XE3A	C4XE3A	
	Black	C2XE3P	C3XE3P	C4XE3P	
Protected  <p>Pushbutton flush mount, spring return and protected cap against accidental operations.</p> <p>Cap color option; round or square bezel in the black option. Call for special colors, legends or symbols.</p>	Red	C2XBPR	C3XBPR	C4XBPR	
	Green	C2XBPV	C3XBPV	C4XBPV	
	Yellow	C2XBPA	C3XBPA	C4XBPA	
	Black	C2XBPP	C3XBPP	C4XBPP	
	White	C2XBPB	C3XBPB	C4XBPB	
	Blue	C2XBPZ	C3XBPZ	C4XBPZ	
	Keylock   <p>Pushbutton, spring return that can be maintained operated. Turnkey to release.</p> <p>Lock</p>	Key Output	ø22	ø30	ø 22
Right only		C2XBYD	C3XBYD	C4XBYD	
Left and Right		C2XBYF	C3XBYF	C4XBYF	
2 positions key: Right position - button stays locked Central position - unlock the button. The key is supplied with standard secret, even so, we can supply with specific secret.					

Double Pushbutton



Control unit with 2 pushbuttons, spring return, green and red cap flush mount. Caps can be marked with ISO Symbols: (I) in the Green Cap (O) in the Red Cap

In option can be supplied with central pilot light. Available only for 22mm holes panel.

To obtain a complete Double Pushbutton, it is necessary to couple a contact block code C5AB11. To use a central pilot light add also an power supply unit (see page 10).

Symbol	Signaling	∅ 22
-	-	C4XD
I O	-	C4XDG
-	Yellow	C4XDP
I O	Yellow	C4XDGP

Mushroom Pushbutton



Push button type mushroom head with momentary contact and spring return. Cap color option; round or square bezel in the black option. Under request we can offer special colors.

Color	∅22	∅30	∅ 22
Red	C2XE4R	C3XE4R	C4XE4R
Green	C2XE4V	C3XE4V	C4XE4V
Yellow	C2XE4A	C3XE4A	C4XE4A
Black	C2XE4P	C3XE4P	C4XE4P

Emergency

∅35mm Latching



Push button type mushroom head, latching function, without spring return. To unlock is necessary turn the button in the sense arrow.



Unlock

Color	∅22	∅30	∅ 22
Red	C2XEK	C3XEK	C4XEK

∅35mm Key



Push button type mushroom head, latching function, without spring return. To unlock is necessary turn the key from left to right.



Unlock



Output Key

Color	∅22	∅30	∅ 22
Red	C2XEY	C3XEY	C4XEY

The output key only occur in the left position. The key is supplied with standard secret, even so, we can supply with specific secret.

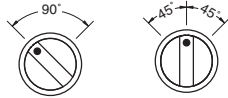
Subject to change without prior notice

Selector

Short Handle



Control unit type selector with rotary handle. Option for 2 or 3 positions with or without spring return. Bezel and handle in black. Please call for other handle colors.

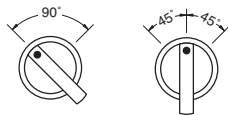


Function	ø22	ø30	ø 22
	C2XSN2PA	C3XSN2PA	C4XSN2PA
	C2XSN2PN	C3XSN2PN	C4XSN2PN
	C2XSN3PB	C3XSN3PB	C4XSN3PB
	C2XSN3PP	C3XSN3PP	C4XSN3PP
	C2XSN3PQ	C3XSN3PQ	C4XSN3PQ
	C2XSN3PR	C3XSN3PR	C4XSN3PR

Long Handle



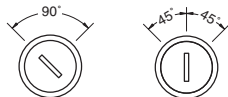
Control unit type selector with rotary handle. Option for 2 or 3 positions with or without spring return. Bezel and handle in black. Please call for other handle colors.



Key



Control unit type selector that can only be operated with key in a rotary movement. Option for 2 or 3 positions with or without spring return. Key extraction can be done in any key position or just in some of them, as indicated in the right side.



Function	ø22	ø30	ø 22
	C2XSY2DA	C3XSY2DA	C4XSY2DA
	C2XSY2EA	C3XSY2EA	C4XSY2EA
	C2XSY2FA	C3XSY2FA	C4XSY2FA
	C2XSY2CC	C3XSY2CC	C4XSY2CC
	C2XSY2EC	C3XSY2EC	C4XSY2EC
	C2XSY2HC	C3XSY2HC	C4XSY2HC
	C2XSY2CD	C3XSY2CD	C4XSY2CD
	C2XSY2DD	C3XSY2DD	C4XSY2DD
	C2XSY2JD	C3XSY2JD	C4XSY2JD
	C2XSY2EN	C3XSY2EN	C4XSY2EN
	C2XSY3CB	C3XSY3CB	C4XSY3CB
	C2XSY3DB	C3XSY3DB	C4XSY3DB
	C2XSY3EB	C3XSY3EB	C4XSY3EB
	C2XSY3FB	C3XSY3FB	C4XSY3FB
	C2XSY3GB	C3XSY3GB	C4XSY3GB
	C2XSY3CP	C3XSY3CP	C4XSY3CP
	C2XSY3CQ	C3XSY3CQ	C4XSY3CQ
	C2XSY3CR	C3XSY3CR	C4XSY3CR

The key is supplied with standard secret, even so, we can supply with specific secret.

Used symbology to define the functions:

	2 positions without return
	2 positions with return from right to left
	3 positions without return
	3 positions with return from left and right to center
	3 positions with return from left to center
	3 positions with return from right to center
	Key extraction in the indicated position

Illuminated Pushbutton ^①

Extended



Illuminated pushbutton with spring return and extended cap. The cap is lighted on (or off) when operated. In order to obtain a full illuminated pushbutton, contact block and power supply must be provided (see page 10). Cap color option.

Protected



Illuminated pushbutton with spring return and protected cap. The cap is lighted on (or off) when operated. In order to obtain a full illuminated pushbutton, contact block and power supply must be provided (see page 10). Cap color option.

Color	ø22	ø30	ø 22
Red	C2XLER	C3XLER	C4XLER
Green	C2XLEV	C3XLEV	C4XLEV
Yellow	C2XLEA	C3XLEA	C4XLEA
Blue	C2XLEZ	C3XLEZ	C4XLEZ
Red	C2XLPR	C3XLPR	C4XLPR
Green	C2XLPV	C3XLPV	C4XLPV
Yellow	C2XLPA	C3XLPA	C4XLPA
Blue	C2XLPZ	C3XLPZ	C4XLPZ

① Limit the power to 2.4W max. when using incandescent bulb.

Illuminated Selector

Short Handle



Control unit type selector knob, bright and rotary motion. Option for 2 or 3 positions without spring return. The dial lights up (or off) when it is operated. Product supplied with power unit and LED bulb ^①. For a complete illuminated selector must also be chosen one contact block (see page 10). Color option to the handle.

Function	Color	ø22 ^②	ø30 ^②	ø 22 ^②
✓	Red	C2XH2RADLR □	C3XH2RADLR □	C4XH2RADLR □
✓	Green	C2XH2VADLV □	C3XH2VADLV □	C4XH2VADLV □
✓	Yellow	C2XH2AADLA □	C3XH2AADLA □	C4XH2AADLA □
✓	Red	C2XH3RBDLR □	C3XH3RBDLR □	C4XH3RBDLR □
✓	Green	C2XH3VBDLV □	C3XH3VBDLV □	C4XH3VBDLV □
✓	Yellow	C2XH3ABDLA □	C3XH3ABDLA □	C4XH3ABDLA □

① By replacing the LED bulb by a incandescent bulb limit the power 1.5W max.

② Replace □ by: **2C** LED bulb 24Vdc (example: C2XH2RADLR**2C**); **3C** LED bulb 48Vdc; **5A** LED bulb 120Vac; **6A**: LED bulb 220Vac.

Pilot Light ^①

Flush Lens



Pilot light with flush lens foreseen to receive a power supply (see page 10). Pilot light is lighted on (or off) when power supply is on. Flush lens color option.

Extended Lens



Pilot light with extended lens designed to support a power supply (see page 10). Pilot light is lighted on (or off) when power supply is on. Extended lens color option. Cannot use neon bulb.

Bulb Type	Color	ø22	ø30	ø 22
Incandescent	Red	C2XPR	C3XPR	C4XPR
	Green	C2XPV	C3XPV	C4XPV
	Yellow	C2XPA	C3XPA	C4XPA
	Blue	C2XPZ	C3XPZ	C4XPZ
	Incolor	C2XPT	C3XPT	C4XPT
Neon	Red	C2XPNR	C3XPNR	C4XPNR
	Yellow	C2XPNA	C3XPNA	C4XPNA
	Incolor	C2XPNT	C3XPNT	C4XPNT
Incandescent	Red	C2XPER	C3XPER	C4XPER
	Green	C2XPEV	C3XPEV	C4XPEV
	Yellow	C2XPEA	C3XPEA	C4XPEA
	Blue	C2XPEZ	C3XPEZ	C4XPEZ

① Limit the power to 2.4W max. when using incandescent bulb.

Joystick

without Lock



Control unit type Joystick with radial movements, supplied full with contact blocks assembled. Type without lock.

with Lock



Control unit type Joystick with radial movements, supplied full with contact blocks assembled. Type with lock. To unlock, pull ring under handle.

Replacement Contact Block



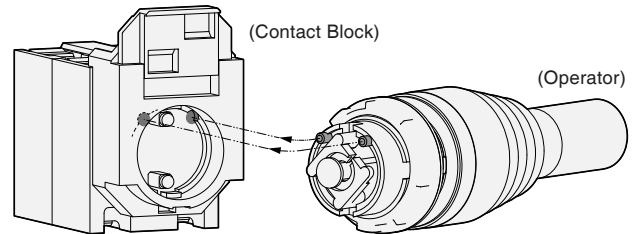
To proceed replacement the contact block that executes the joystick electrical functions, select one of the codes beside (according to the number of positions).

The joystick's block has 4 NO silver alloy self cleaning contacts.

The assembly operator in the block must be done according to the illustration beside.

The contact blocks codes **C5AB01**, **C5AB02**, **C5AB10**, **C5AB11** and **C5AB20** can not be used in the joystick.

Positions	Return	ø22	ø30	ø 22
2 Positions	with	C2MF2	C3MF2	C4MF2
	without	C2MV2	C3MV2	C4MV2
4 Positions	with	C2MF4	C3MF4	C4MF4
	without	C2MV4	C3MV4	C4MV4
2 Positions	with	C2MF2W	C3MF2W	C4MF2W
	without	C2MV2W	C3MV2W	C4MV2W
4 Positions	with	C2MF4W	C3MF4W	C4MF4W
	without	C2MV4W	C3MV4W	C4MV4W
2 Positions		C5AB40M2 (ø22, ø30 and ø 22)		
4 Positions		C5AB40M4 (ø22, ø30 and ø 22)		



Lever Position / Contacts

2 Positions

Center

Top

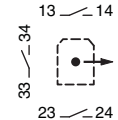
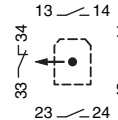
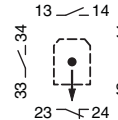
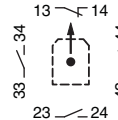
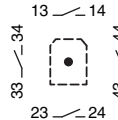
Bottom

Left

Right




4 Positions



Subject to change without prior notice

Contact Block

The contact block executes the electrical functions.

With self cleaning, silver alloy contacts and positive opening of the NC contact .

The first contact block is connected to actuator by one screw. One additional block can be connected to the first also by one screw.









The maximum limit is one additional contact block and only double body contact blocks allow the assembly of additional blocks.

Actuating pin and cover cap in colors: green meaning NO and red NC.

In order to obtain the maintained contact condition, ask for the Step Actuator code **C5AZ**. This accessory maintains the contact in new position after first actuation and only allows the return back to initial position when actuated a second time.



C5AZ

Contacts	Circuitry	Code
1NO + 1NC 		C5AB11 ①
1NO		C5AB10 ②
1NC 		C5AB01 ②
2NO		C5AB20 ①
2NC 		C5AB02 ①



① Double body contact blocks



② Single body contact blocks

Power Supply Unit



Lamp feeding unit for illuminated buttons, selectors, and pilot lights.

Fastening base with BA9S socket

- ① Supplied without bulb
- ② Supplied with bulb 120V
- ③ Supplied with bulb 24V

Function		Code
with Direct Feed		C5AUD ①
with Resistor	220/120Vac	C5AUC ②
with Voltage Reducer	110/24Vac	C5AUJ ③
	220/24Vac	C5AUK ③

BA9S Bulbs ①

Type	Voltage	Power	Code
Incandescent	6V	1.5W	C5AL615
		2.4W	C5AL624
	12V	1.2W	C5AL1212
		2.4W	C5AL1224
	24V	1.2W	C5AL2412
		2.4W	C5AL2424
48V	1.2W	C5AL4812	
	2.4W	C5AL4824	
120V	2.4W	C5AL12024	
	2.4W	C5AL12024	
Neon ②	120V	-	C5ALN120
	220V	-	C5ALN220

Type	Voltage	Color	Code
LED high brightness	24Vdc	Yellow	C5ALLA2C
		White	C5ALLB2C
		Red	C5ALLR2C
	48Vdc	Green	C5ALLV2C
		Yellow	C5ALLA3C
		White	C5ALLB3C
	120Vac	Red	C5ALLR3C
		Green	C5ALLV3C
		Yellow	C5ALLA5A
220Vac	White	C5ALLB5A	
	Red	C5ALLR5A	
	Green	C5ALLV5A	
	Yellow	C5ALLA6A	
	White	C5ALLB6A	
	Red	C5ALLR6A	
Green	C5ALLV6A		

① Use KAP bulbs always. Bulbs with more than 2.4W may cause damage in the product due the generated heating, mostly in hot environments. If you have questions, please contact our technical department.

② Do not use Neon bulb in pilot lights with green lens.

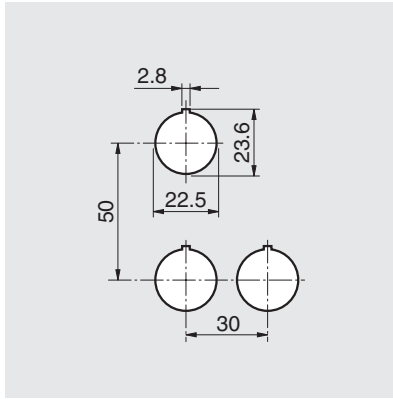
Accessories ①

		Code
Flange		C5AF
Legend Plates		to round operator 22mm C2AQ
		to round operator 30mm C3AQ
		to square operator 22mm C4AQ
		to joystick 2 positions round 30mm C3AQM2
		to joystick 4 positions round 30mm C3AQM4
		to joystick 2 positions round and square 22mm C5AQM2
		to joystick 4 positions round and square 22mm C5AQM4
		Circular Legend ø65mm, color yellow to operator 22mm C5AQE
		Circular Legend ø65mm, color yellow to round operator 30mm C3AQE
		all types, marked Call
Protective Cover		to Flush Pushbutton - round 22mm C2AK
		to Flush Pushbutton - round 30mm C3AK
		to Flush Pushbutton - square 22mm C4AK
		to Double Pushbutton C4DAK
Blanking Plug		round 22mm C2AT
		round 30mm C3AT
		square 22mm C4AT
Enclosure		with 1 Hole to round and square operator 22mm C5QE1
		with 2 Holes to round and square operators 22mm C5QE2
		with 3 Holes to round and square operators 22mm C5QE3
		with 4 Holes to round and square operators 22mm C5QE4
		with 5 Holes to round and square operators 22mm C5QE5
		with 6 Holes to round and square operators 22mm C5QE6
		Control Stations Assembled set with control and signaling units Call
Tightening tool		C5AX
		
Adaptor for panel ø30		Application: mounting of double button (C4XD. ..) in panels hole Ø30mm C4AD
		
Pushbutton protective cover		C5AEE
		

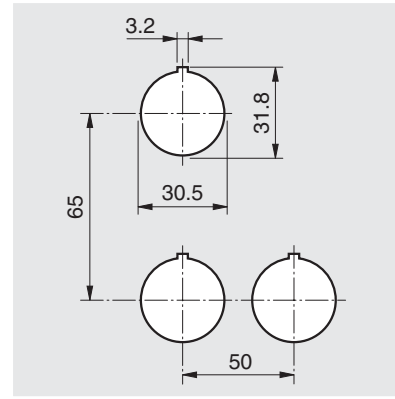
① The choice of the accessory code is related to the operator used. Contact us.

② Incompatible with emergency and double buttons.

Fixing Dimensions (minimum recommended dimensions)



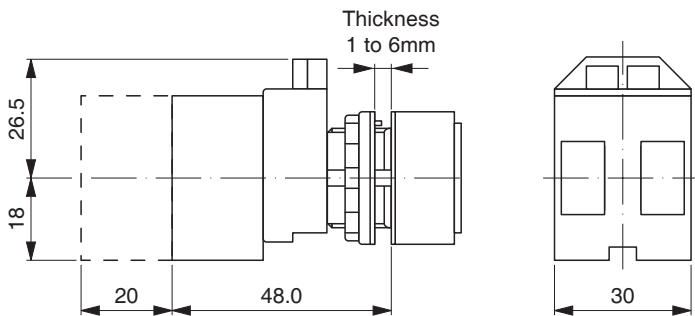
Holes Spacing for Operator 22mm



Holes Spacing for Operator 30mm

Main Dimensions

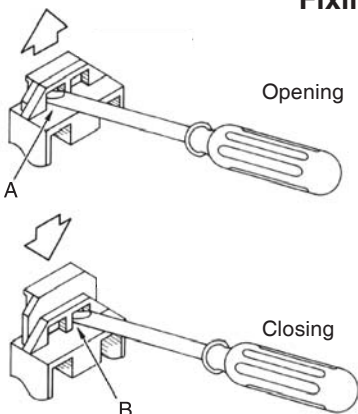
Dimensions for full control unit with 2 contact blocks or 1 power supply unit + 1 contact block.



- The maximum limit is of 2 put upon contact blocks
- Panel thickness between 1 to 6mm;
- Screw terminals with retractable clamp;
- Terminal identification colors:

Color Green NO Terminal
Color Red NC Terminal

Fixing system of the operator to the component

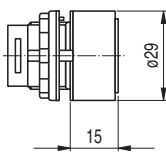
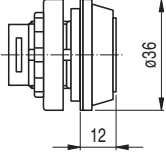
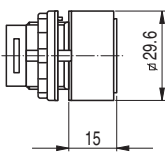
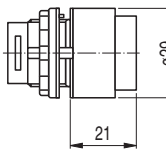
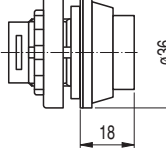
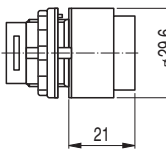
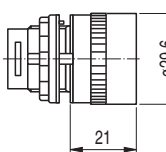
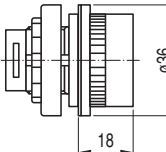
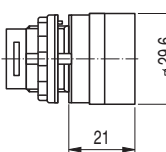
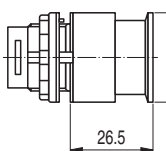
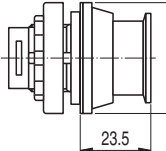
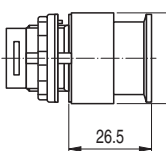
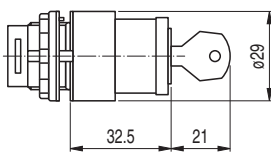
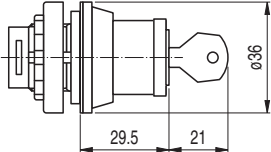
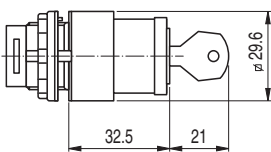
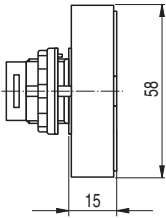
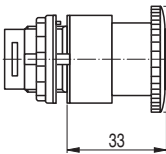
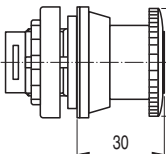
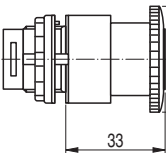
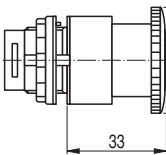
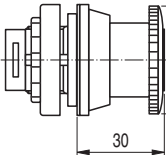
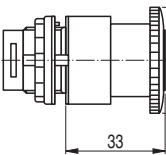


The flange (between actuator and the component) is provided with two square recesses that are always accessible when product is mounted in the panel. It is by means of those recesses that the locking tab can be moved to release actuator from flange.

This moving can be done by a normal flat screw driver (the same used to make the electrical connections).

- To open the flange, lift up tab through A as shown in figure.
- To close the flange and fix the actuator, move down tab through B as shown in figure.

Dimensions of the Operators (part 1)

	Round Bezel to Hole 22mm	Round Bezel to Hole 30mm	Square Bezel to Hole 22mm
Flush Pushbutton C2XBN... C3XBN... C4XBN...			
Extended Pushbutton C2XBE... C3XBE... C4XBE...			
Protected Pushbutton C2XBP... C3XBP... C4XBP...			
Extended 29mm Pushbutton C2XE3... C3XE3... C4XE3...			
Key Pushbutton C2XBY... C3XBY... C4XBY...			
Double Pushbutton C4XD...			
Mushroom Pushbutton C2XE4... C3XE4... C4XE4...			
Latching Emergency C2XEK... C3XEK... C4XEK...			

Subject to change without prior notice

Dimensions of the Operators (part 2)

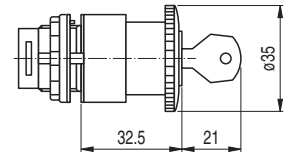
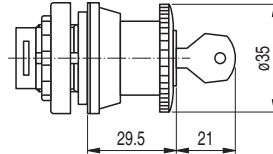
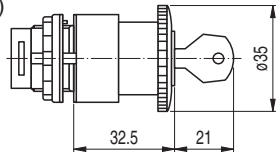
Round Bezel
to Hole 22mm

Round Bezel
to Hole 30mm

Square Bezel
to Hole 22mm

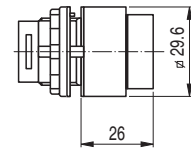
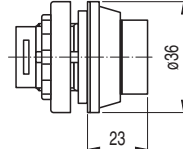
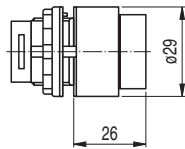
Emergency (Mushroom head)

C2XE4...
C3XE4...
C4XEY...



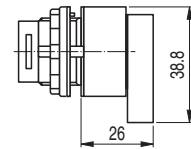
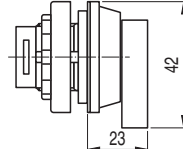
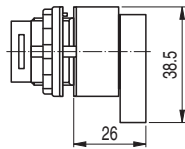
Selector - Short Handle

C2XSN...
C3XSN...
C4XSN...



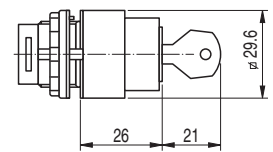
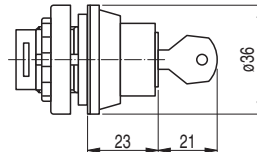
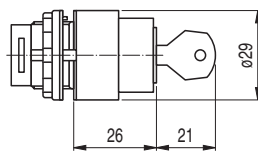
Selector - Long Handle

C2XSA...
C3XSA...
C4XSA...



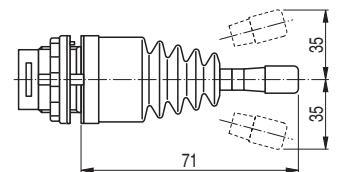
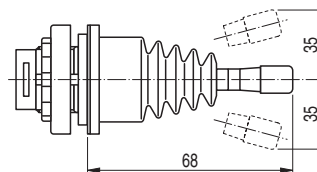
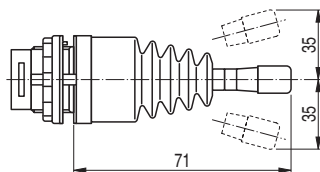
Selector with Key

C2XSY...
C3XSY...
C4XSY...



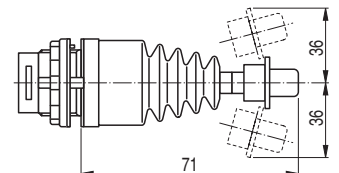
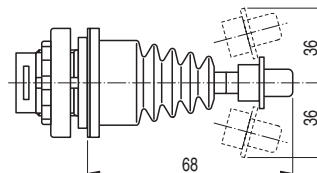
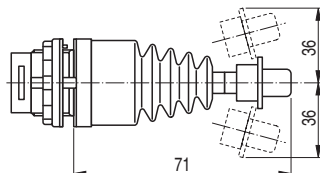
Joystick without Lock

C2XM...
C3XM...
C4XM...



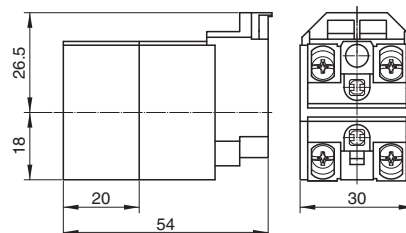
Joystick with Lock

C2XM...W
C3XM...W
C4XM...W



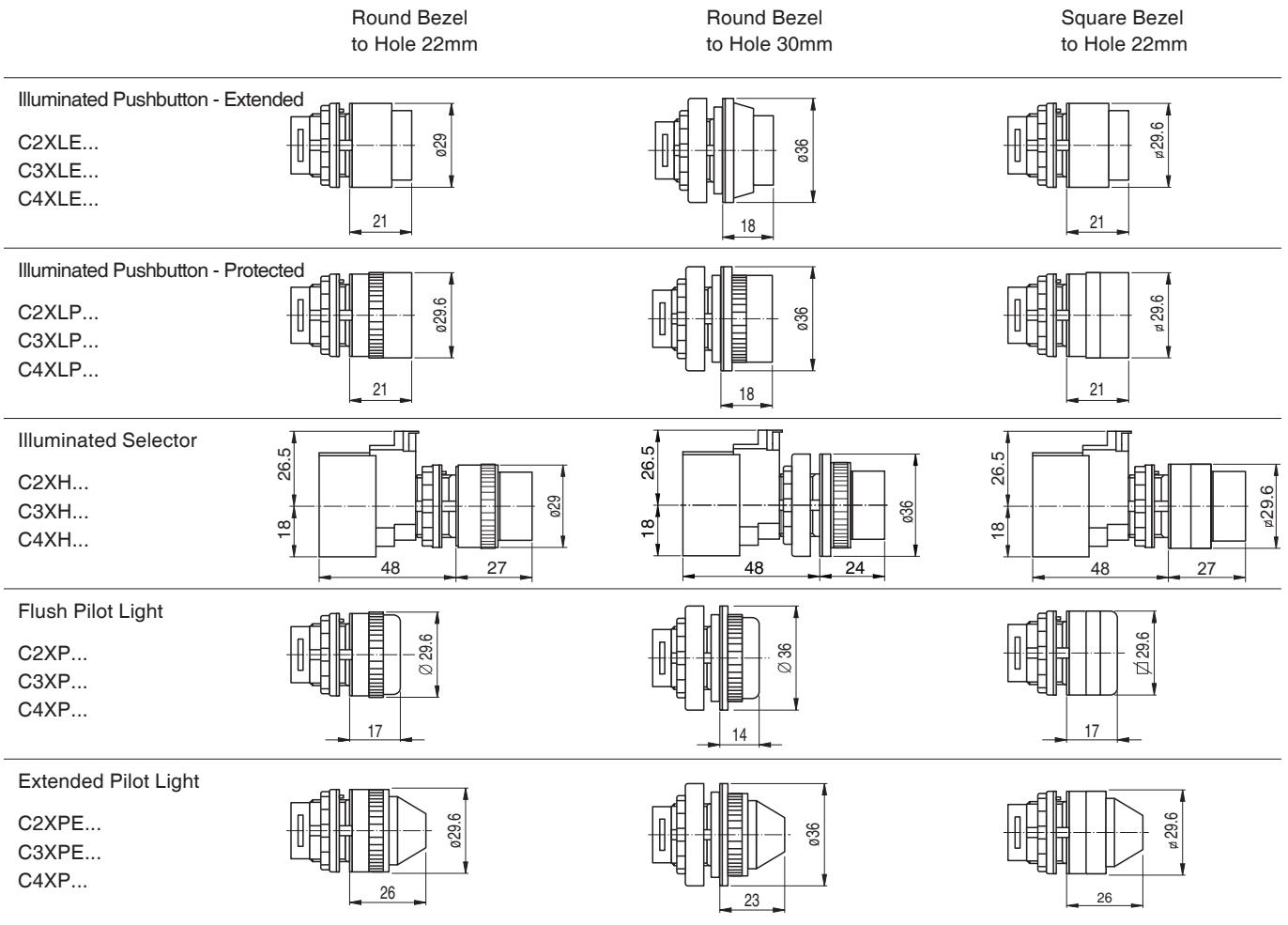
Replacement Contact Block (to Joystick)

C5AB40...



Subject to change without prior notice

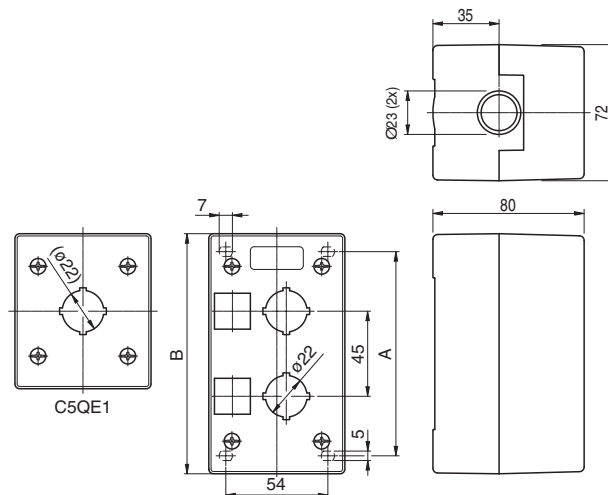
Dimensions of the Operators (part 3)



Enclosures

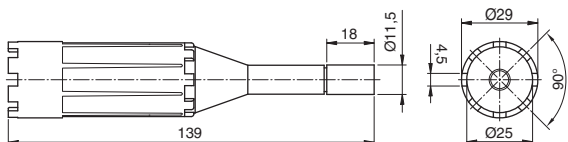
C5QE...

CODE	HOLE	A	B
C5QE1	1	63	82
C5QE2	2	108	127
C5QE3	3	153	172
C5QE4	4	198	217
C5QE5	5	243	262
C5QE6	6	288	307



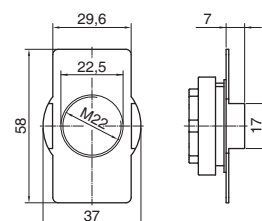
Tightening tool

C5AX



Adaptor for panel ø30

C4AD





KAP COMPONENTES ELÉTRICOS Ltda.

Rua Carmo do Rio Verde, 78 - Santo Amaro

ZIP : 04729-010 - São Paulo - SP - Brazil

☎ : (+5511) 5645-4444

website: www.kap.com.br

e-mail: comex@kap.com.br

**QUALITY SYSTEM ACCORDING TO
NBR ISO 9001:2015**

KAP
electrical components