Selection diagram

STATE INDICATION

Z
without
mechanical indicator

F
with
mechanical indicator

RELEASE MODALITY

P
push-pull

R
turn to release

B
key release

MUSHROOM COLOUR

3
red
(EMERGENCY function)

1
black
(only STOP function)

BODY COLOUR

5
yellow

7
yellow with 4 green indicating lines

FIXING RING

Emergency pushbuttons code structure

E2 1PERZ4531-T6

Fixing ring and shaped ring

1	ring in plastic
2	ring in plastic and shaped ring
3	ring in metal
4	ring in metal and shaped ring

Ambient temperature

| | -25°C ... +85°C (standard) |
| T6 | -40°C ... +85°C |

Release modality

P	push-pull
R	turn to release
B	key release (not available in slotted version)

Type of actuator

| 1 | for adapter with 3 positions |
| 4 | for adapter with 4 positions |

State indication

| Z | without |
| F | with mechanical indicator |

Mushroom colour

| 1 | black |
| 3 | red |

Mushroom diameter

| 4 | Ø 40 mm mushroom |

Body colour

| 5 | yellow |
| 7 | yellow with 4 green indicating lines |

Attention! The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

Technical data

General

Protection degree:	IP67 according to IEC 60529
	IP69K according to DIN 40050[b]
Ambient temperature:	-25°C +80°C
Mechanical endurance:	300.000 operations cycles[1]
Max operating frequency:	3600 operations cycles[1]/hour
Actuating travel:	4 mm (NO contact), 4 mm (NC contact)
Actuating force:	25 N
Actuating force at end travel:	Push-pull 18,5 N (without contacts)
	Turn to release 35 N (without contacts)
Maximum travel:	9 mm
Ring driving torque:	2 ... 2,5 Nm
Utilization requirements:	see page 3/98

(1) One operation cycle means two movements, one to close and one to open contacts, as foreseen by EN 60947-5-1 standard.
(b) Protect the cables from direct high-pressure and high-temperature jets

In conformity with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60947-5-5, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60947-5-5, EN 60204-1, EN ISO 13850, UL 508, CSA 22-2 N°14

⚠ **Installation for safety applications:**
Use only switches marked with the symbol ⊖. The safety circuit must always be connected with the **NC contacts** (normally closed contacts: 1-2) as stated in the standard EN 60947-5-1, encl. K, par. 2.

In conformity with requirements requested by:

Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC and Electromagnetic Compatibility 2004/108/EC.
Positive contact opening in conformity with standards:
IEC 60947-5-1, EN 60947-5-1, VDE 0660-206.

Main features

- Protection degree IP67 and IP69K
- 3 different release modality
- Version with mechanical indicator
- Versions for - 40˚C

Markings and quality marks:

CE   POCC

Approval GOST: POCC IT.AB24.B04512

General characteristics

State indication

The push-pull and turn to release emergency pushbutton can be provided with a visual state indication through a mechanical indicator. The state is indicated by green colour when the pushbutton is not actuated and red colour when it is actuated.

Mechanical endurance

All emergency pushbuttons have been tested to endure 300.000 mechanical cycles.

Fixing ring

A fixing ring in metal is also available in addition to the fixing ring in technopolymer.
The fixing ring in metal is particularly suitable for those applications which require tighter fitting of the panel-mounted device, such as for example in metal panels having holes without reference notches. Both rings feature a toothed surface which comes into contact with the inside of the panel in order to make it easier for the device to be secured to the actual panel.

Shaped ring
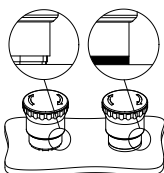
The shaped ring can be used when no label holders or other devices are applied; it prevents dirt and other residues from settling between the pushbutton and the panel or box. This turns out to be particularly useful in the sectors where high standards of cleanness and hygiene are required.

Available versions

Pizzato Elettrica new emergency pushbuttons, which function is to allow the operator to stop a device or a machine in case of danger by pushing the same button, are classified by their release modality: push-pull, turn to release and key release.

Protection degree IP67 and IP69K

**IP69K
IP67**

Designed to be employed also in severe environment conditions, Pizzato Elettrica pushbuttons have protection degree IP67 and IP69K, suitable for use in machineries subjected to intense washing with high pressure and high temperature water jets.

Temperature range extended

-40°C

Special versions can be ordered for use in environments where the temperature changes from +80°C to -40°C.
They can be installed inside cold stores, sterilizers or other equipments with very low ambient temperature. Special materials that have been used to realize these versions, maintain unchanged their features also in these conditions, widening the installation possibilities.

Emergency pushbuttons selection table
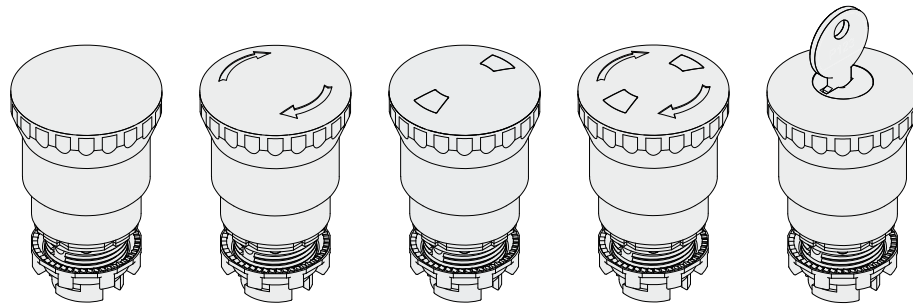
Body colour and marking	Actuator colour and marking	Push-pull	Turn to release	Push-pull with mechanical indicator	Turn to release with mechanical indicator	Release with key Key number PY333
yellow	red	E2 1PEPZ4531	E2 1PERZ4531	E2 1PEPF4531	E2 1PERF4531	E2 1PEBZ4531
yellow with 4 green indicating lines	red	E2 1PEPZ4731	E2 1PERZ4731	E2 1PEPF4731	E2 1PERF4731	E2 1PEBZ4731
yellow	black	E2 1PEPZ4511	E2 1PERZ4511	-	-	E2 1PEBZ4511

Warning! For safety application use only red emergency pushbutton, the black one can be used only for STOP function.

Complete units with emergency pushbuttons
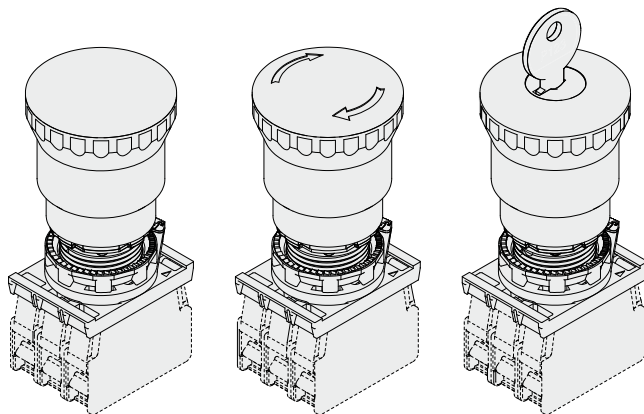
Body colour and marking	Actuator colour and marking	Contacts pos 2	pos 3	pos 1	Push-pull	Turn to release	Release with key Key number PY333
yellow	red	-	1NC	-	E2 AC-DXBC1005 E2 1PEPZ4531 + E2 1BAC11 + E2 CP01G2V1	E2 AC-DXBC1006 E2 1PERZ4531 + E2 1BAC11 + E2 CP01G2V1	E2 AC-DXBC1007 E2 1PEBZ4531 + E2 1BAC11 + E2 CP01G2V1
yellow	red	-	1NC SELF-MONITORED	-	E2 AC-DXBC1022 E2 1PEPZ4531 + E2 1BAC11 + E2 CP01S2V1	E2 AC-DXBC1023 E2 1PERZ4531 + E2 1BAC11 + E2 CP01S2V1	E2 AC-DXBC1024 E2 1PEBZ4531 + E2 1BAC11 + E2 CP01S2V1
yellow	red	1NC	-	1NC	E2 AC-DXBC1010 E2 1PEPZ4531 + E2 1BAC11 + E2 CP01G2V1 + E2 CP01G2V1	E2 AC-DXBC1002 E2 1PERZ4531 + E2 1BAC11 + E2 CP01G2V1 + E2 CP01G2V1	E2 AC-DXBC1011 E2 1PEBZ4531 + E2 1BAC11 + E2 CP01G2V1 + E2 CP01G2V1
yellow	red	1NC	1NC	1NO	E2 AC-DXBC1012 E2 1PEPZ4531 + E2 1BAC11 + E2 CP01G2V1 + E2 CP01G2V1 + E2 CP10G2V1	E2 AC-DXBC1000 E2 1PERZ4531 + E2 1BAC11 + E2 CP01G2V1 + E2 CP01G2V1 + E2 CP10G2V1	E2 AC-DXBC1013 E2 1PEBZ4531 + E2 1BAC11 + E2 CP01G2V1 + E2 CP01G2V1 + E2 CP10G2V1

➔ For the contact block characteristics see page 3/55.

Locking keys

Article	Description
VE KE1A00-PY333	Locking key

Extra copy of the locking keys to be purchased if further key is needed.
All keys have the same code. Other codes on request.

Items with code on the **green** background are available in stock
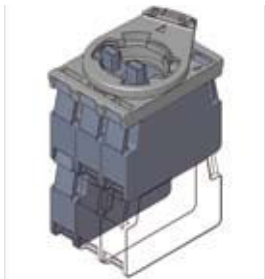
Dimensions

Emergency pushbutton

46.3

65.5

40
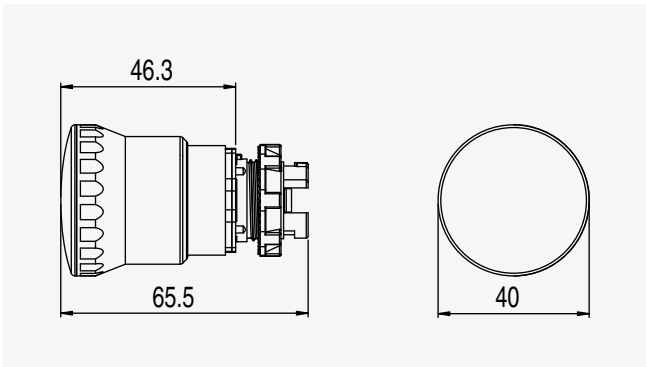
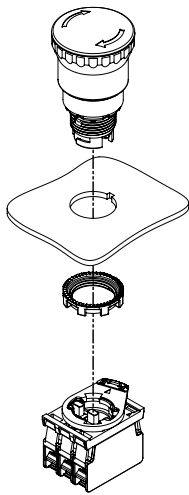### Emergency pushbutton with key

45.8

23.2   65

40
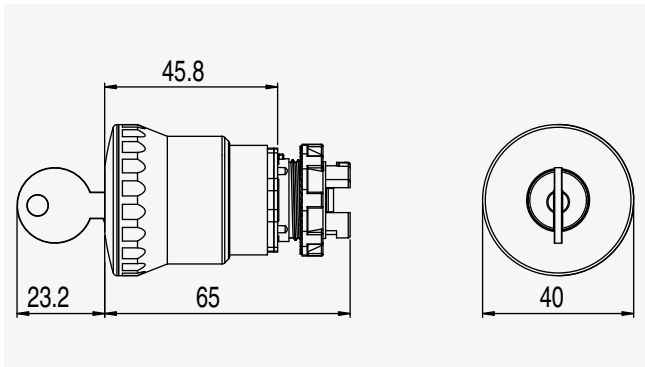
Contacts maximum number

Fixing adapter with 3 positions	Fixing adapter with 4 positions
Emergency pushbuttons E2 1PE•••••1	Emergency pushbuttons E2 1PE•••••4

Maximum number:
contacts 4
levels 2

Maximum number:
contacts 4
levels 1

The actuator for an adapter with 4 positions must be mounted after fixing the push-button.

contact block

Contact block alternative position

Actuator for adapter with 4 positions   10 pcs packs

Article	Description
VE AS1218	Long closed actuator for fixing adapter with 4 positions. It must be installed after fixing the push-button to the wall. For E2 1PE pushbuttons.

Assembling minimum distances

≥50
≥41
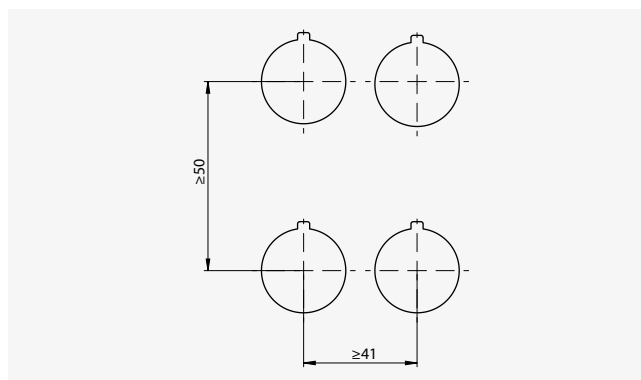
Label with shaped hole   5 pcs packs

Suited for the devices E2 1PE   .
According to EN ISO 13850.
Adjustable in 90° steps.
Other languages on request.
It does not alter the device protection degrees IP67 and IP69K.

Article	Description
VE TF32A5700	Label with shaped hole, Ø 60 mm yellow disc, no writing
VE TF32D5700	Label with shaped hole, Ø 90 mm yellow disc, no writing
VE TF32A5101	Label with shaped hole, yellow disc Ø 60 mm, writing: STOP ⊽ EMERGENZA ⊽
VE TF32D5101	Label with shaped hole, yellow disc Ø 90 mm, writing: STOP ⊽ EMERGENZA ⊽
VE TF32A5102	Label with shaped hole, yellow disc Ø 60 mm, writing: EMERGENCY ⊽ STOP ⊽
VE TF32D5102	Label with shaped hole, yellow disc Ø 90 mm, writing: EMERGENCY ⊽ STOP ⊽
VE TF32A5109	Label with shaped hole, yellow disc Ø 60 mm, writing: STOP ⊽ STOP ⊽ STOP ⊽ STOP ⊽
VE TF32D5109	Label with shaped hole, yellow disc Ø 90 mm, writing: STOP ⊽ STOP ⊽ STOP ⊽ STOP ⊽
VE TF32A5120	Label with shaped hole, yellow disc Ø 60 mm, writing: STOP EMERGENZA ⊽ ARRET D'URGENCE ⊽ NOT AUS ⊽ EMERGENCY STOP ⊽
VE TF32D5120	Label with shaped hole, yellow disc Ø 90 mm, writing: STOP EMERGENZA ⊽ ARRET D'URGENCE ⊽ NOT AUS ⊽ EMERGENCY STOP ⊽
VE TF32G5700	Label with shaped hole, rectangular 30x60 mm, no writing
VE TF32G5103	Label with shaped hole, rectangular 30x60 mm, writing STOP ⊽
VE TF32G5110	Label with shaped hole, rectangular 30x60 mm, writing STOP ⊽

Accessories

➜ More ACCESSORIES at page 3/95

All measures in the drawings are in mm

Selection diagram
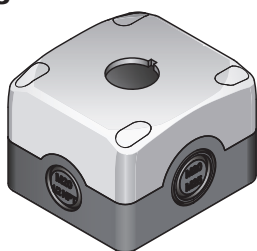
ES 31000
grey cover
1 hole, Ø 22 mm
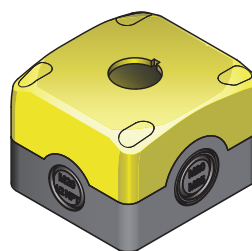
ES 31001
yellow cover
1 hole, Ø 22 mm
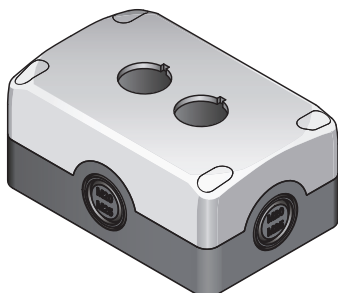
ES 32000
grey cover
2 holes, Ø 22 mm
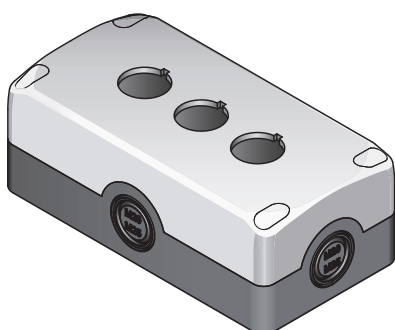
ES 33000
grey cover
3 holes, Ø 22 mm
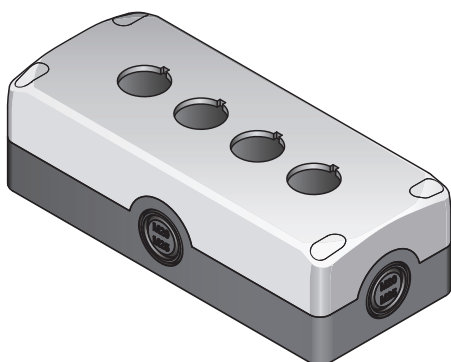
ES 34000
grey cover
4 holes, Ø 22 mm

ES 36000
grey cover
6 holes, Ø 22 mm

Enclosure code structure

ES 31001

Housing material	
3	polycarbonate PC (standard)

Box dimensions	
1	72x80h56 mm
2	120x80h56 mm
3	153x80h56 mm
4	186x80h56 mm
6	252x80h56 mm

Configuration	
000	black base, grey cover
001	black base, yellow cover
...	....

Attention! The feasibility of a code number does not mean the effective availability of a product. Please contact our sales office.

Main features

- Protection degree IP67 and IP69K
- Stainless steel retained screws
- 4 lateral knock out conduit entries
- Supplied with screw caps

Markings and quality marks:

$C \in$ POCC

Approval GOST: POCC IT.AB24.B04512

Technical data

Housing

Material:	Shock-proof, self-extinguishing polymer with double insulation, UV resistant, fibreglass-reinforced material, high-impact resistance.
Screw material:	Stainless steel
Protection degree:	IP67 according to IEC 60529[a]
	IP69K according to DIN 40050[b]
Conduit entries:	1 hole housing:

- 2 upper and lower knock out conduit entries M20 - 1/2 NPT
- 2 lateral knock out conduit entries M20 - 1/2 NPT - M25
- 2 base knock out conduit entries M16

2-3-4-6 holes housings:

- 4 lateral knock out conduit entries M20 - 1/2 NPT - M25
- 2 base knock out conduit entries M20

Devices assembling:	Suit for assembling with control and signalling Ø 22 mm devices.
	Ø 22 mm hole according to EN 60947-5-1
Utilization requirements:	see page 3/98

(a) with cable gland having equal or higher protection degree
(b) Protect the cables from direct high-pressure and high-temperature jets)

General data

Ambient temperature:	-40°C +80°C
Cover screws driving torque:	1 ... 1,4 Nm

In conformity with standards:
IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 574, EN 60947-1, EN 60947-5-1, EN 60204-1, UL 508, CSA 22-2 N°14.

In conformity with requirements requested by:
Low Voltage Directive 2006/95/EC
Machinery Directive 2006/42/EC
Electromagnetic Compatibility 2004/108/EC.

General characteristics

Protection degree IP67 and IP69K

Designed to be employed also in severe environment conditions, Pizzato Elettrica enclosures have protection degree IP67 and IP69K, suitable for use in machineries subjected to intense washing with high pressure and high temperature water jets.

Fitting the EROUND boxes

The new EROUND line boxes by Pizzato Elettrica feature 4 additional holes in the cover, which make it possible to fit the boxes to a wall by inserting the screws through their external part, therefore without needing to open their cover to gain access to the holes.
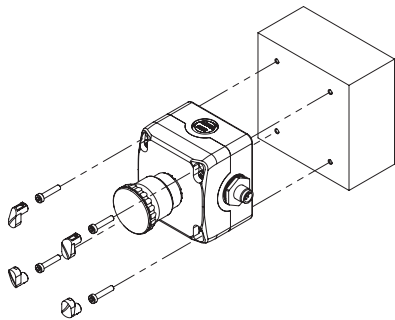
The wall-fitting screws and the box cover closing screws can be sealed by means of 4 caps (caps supplied with the box) which, besides improving the appearance of the box line, avoid any dirt being deposited inside the screw recesses and make tampering more difficult.
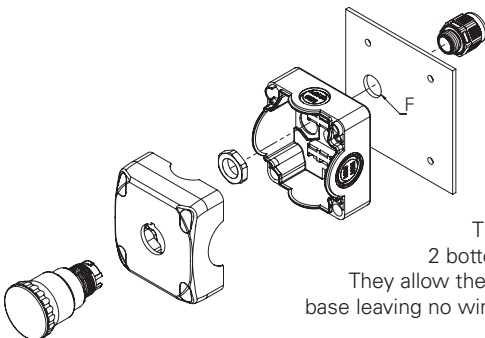
External fitting turns out to be particularly advantageous for prewired boxes, since the entire installation work becomes simpler; all that is needed is to fix the box and attach the connector which, thanks to the cable inlets available on the four sides of the box, can be positioned in the chosen direction.

One housing, two solutions
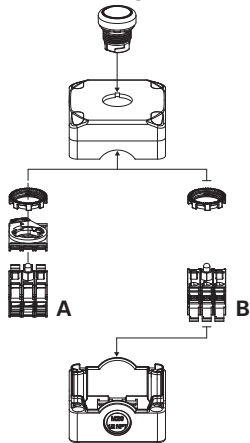
The same housing can have up to 3 contact/LED blocks with panel fixing(E2 CP, E2 LP) to be applied through the fixing adapter (A) or up to 3 contact/LED blocks with base fixing (E2 CF, E2 LF) to be fixed directly to the enclosure base (B).

Wiring through the lower surface

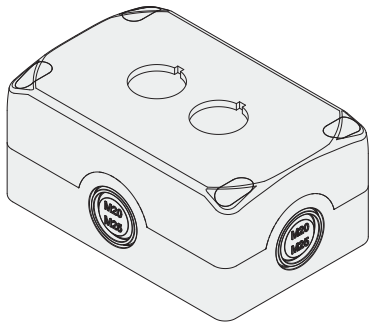| cablegland	F
M16	Ø 25
M20	Ø 28

The enclosures have 2 bottom conduit entries. They allow the wiring through the base leaving no wiring cables on view.
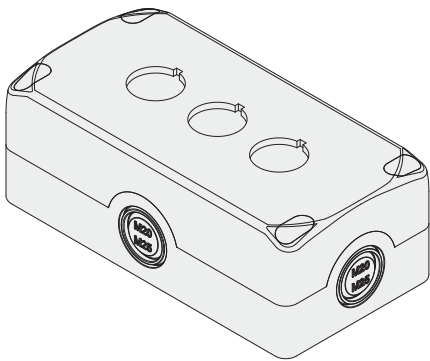
Enclosures selection table
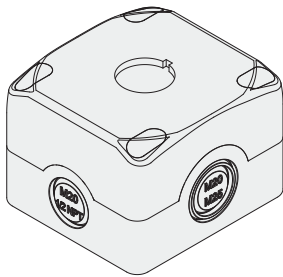
Cover colour	Article
yellow RAL 1003	ES 31001
grey RAL 7035	ES 31000

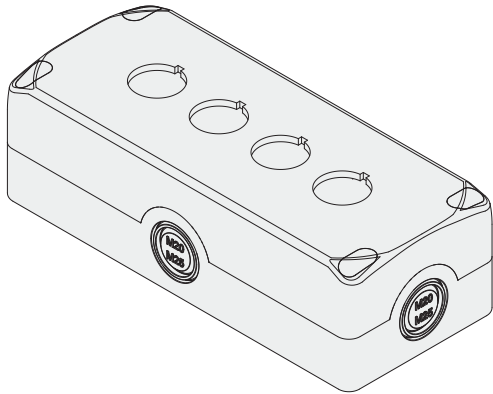The standard colour of the base in above mentioned codes is BLACK RAL 9005.

Cover colour	Article
grey RAL 7035	ES 32000

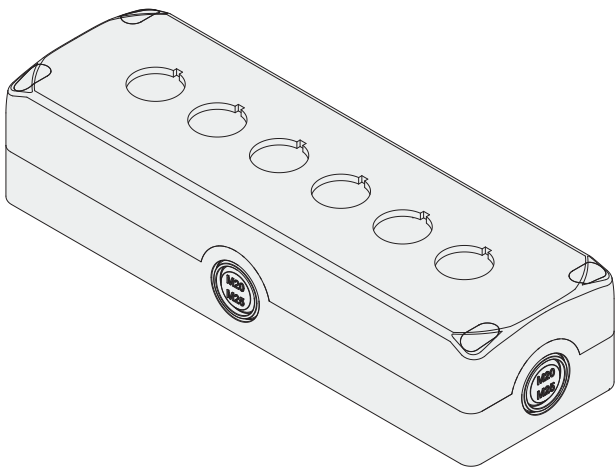The standard colour of the base in above mentioned codes is BLACK RAL 9005.

Cover colour	Article
grey RAL 7035	ES 33000

The standard colour of the base in above mentioned codes is BLACK RAL 9005.

Cover colour	Article
grey RAL 7035	ES 34000

The standard colour of the base in above mentioned codes is BLACK RAL 9005.

Cover colour	Article
grey RAL 7035	ES 36000

The standard colour of the base in above mentioned codes is BLACK RAL 9005.

Items with code on the **green** background are available in stock

Complete units with enclosures
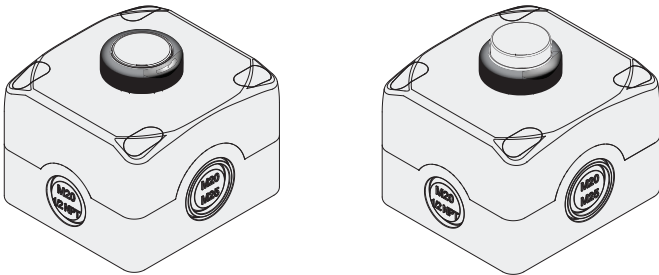
Box cover colour	Actuator colour and marking	Contacts			Flush pushbutton Black ring	Projecting pushbutton Black ring
		pos 2	pos 3	pos 1		
☐ grey RAL 7035	🟢 **I** green	-	1NO	-	**ES AC31001** ES 31000 + E2 1PU2R421L2 + E2 CF10G2V1	-
☐ grey RAL 7035	🔴 **O** red	-	1NC ⊙→	-	**ES AC31002** ES 31000 + E2 1PU2R321L1 + E2 CF01G2V1	**ES AC31017** ES 31000 + E2 1PU2S321L1 + E2 CF01G2V1
☐ grey RAL 7035	🟢 START green	-	1NO	-	**ES AC31015** ES 31000 + E2 1PU2R421GB1 + E2 CF10G2V1	-
☐ grey RAL 7035	🔴 STOP red	-	1NC ⊙→	-	**ES AC31016** ES 31000 + E2 1PU2R321GB0 + E2 CF01G2V1	**ES AC31018** ES 31000 + E2 1PU2S321GB0 + E2 CF01G2V1

The standard colour of the base in above mentioned codes is BLACK RAL 9005.

➜ For contact blocks and pushbuttons characteristics see the relative chapters.

Complete units with enclosures
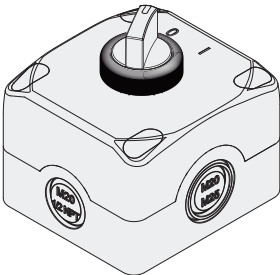
| Box cover colour	Position	Contacts			Two positions black selector Black ring
		pos 2	pos 3	pos 1	
☐ grey RAL 7035	⌄	-	1NO	-	**ES AC31019** ES 31002 + E2 1SE12AVA11AB + E2 CF10G2V1

The standard colour of the base in above mentioned codes is BLACK RAL 9005.

➜ For contact blocks and LED holders characteristics see the relative chapters.

Complete units with enclosures
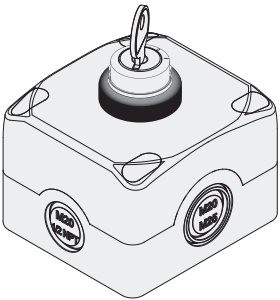
Box cover colour	Position	Contacts			Two positions key black selector Black ring
		pos 2	pos 3	pos 1	
☐ grey RAL 7035	⌁⌄	-	1NO	-	**ES AC31020** ES 31000 + E2 1SC2AVA11AE + E2 CF10G2V1

The standard colour of the base in above mentioned codes is BLACK RAL 9005.

➜ For contact blocks and LED holders characteristics see the relative chapters.

Legend: ⋁ Stay-put   ▽ Spring-return   𝟠 Key withdrawal position

Complete units with enclosures
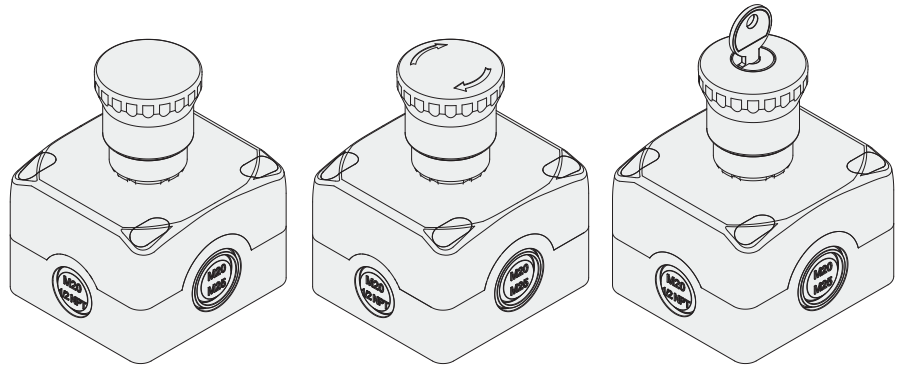
| Box cover colour	Actuator colour and marking	Contacts			Push-pull emergency button	Turn to release emergency pushbutton	Key release emergency pushbutton
		pos 2	pos 3	pos 1			
yellow RAL 1023	red	-	1NC ⊕	-	**ES AC31004** ES 31001 + E2 1PEPZ4531 + E2 CF01G2V1	**ES AC31003** ES 31001 + E2 1PERZ4531 + E2 CF01G2V1	**ES AC31022** ES 31001 + E2 1PERZ4531 + E2 CF01G2V1
yellow RAL 1023	red	-	1NC ⊕ SELF-MONITORED	-	**ES AC31081** ES 31001 + E2 1PEPZ4531 + E2 CF01S2V1	**ES AC31082** ES 31001 + E2 1PERZ4531 + E2 CF01S2V1	**ES AC31083** ES 31001+ E2 1PEBZ4531 + E2 CF01S2V1
Yellow RAL 1023	red	1NC ⊕	-	1NC ⊕	-	**ES AC31005** ES 31001 + E2 1PERZ4531 + E2 CF01G2V1 + E2 CF01G2V1	**ES AC31023** ES 31001+ E2 1PEBZ4531 + E2 CF01G2V1 + E2 CF01G2V1
yellow RAL 1023	red	1NC ⊕	-	1NO	-	**ES AC31006** ES 31001 + E2 1PERZ4531 + E2 CF01G2V1 + E2 CF10G2V1	**ES AC31011** ES 31001+ E2 1PEBZ4531 + E2 CF01G2V1 + E2 CF10G2V1
yellow RAL 1023	red	1NC ⊕	1NC ⊕	1NO	-	**ES AC31021** ES 31001 + E2 1PERZ4531 + E2 CF01G2V1 + E2 CF01G2V1 + E2 CF10G2V1	**ES AC31024** ES 31001+ E2 1PEBZ4531 + E2 CF01G2V1 + E2 CF01G2V1 + E2 CF10G2V1

The standard colour of the base in above mentioned codes is **BLACK RAL 9005**.

➜ For contact blocks and emergency pushbuttons characteristics see the relative chapters.
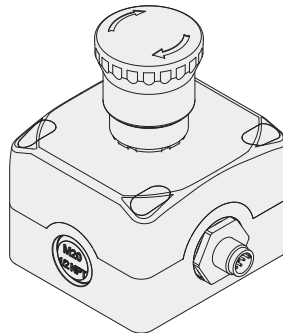
Box cover colour	Actuator colour and marking	Contacts			Turn to realease emergency pushbutton Plastic wired M12 connector
		pos 2	pos 3	pos 1	
yellow RAL 1023	red	-	1NC ⊕	-	**ES AC31025**
yellow RAL 1023	red	-	1NC ⊕ SELF-MONITORED	-	**ES AC31084**
yellow RAL 1023	red	1NC ⊕	-	1NC ⊕	**ES AC31026**
yellow RAL 1023	red	1NC ⊕	-	1NO	**ES AC31027**
yellow RAL 1023	red	1NC ⊕	1NC ⊕	1NO	**ES AC31028**

The standard colour of the base in above mentioned codes is **BLACK RAL 9005**.

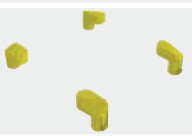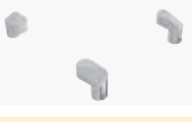➜ For contact blocks and emergency pushbuttons characteristics see the relative chapters.

Spare caps

	Article	Description
	VE TS35RA1	4 spare caps for box covers ES series. Colour: yellow
	VE TS39RA1	4 spare caps for box covers ES series. Colour: grey

Accessories

➜ More ACCESSORIES at page 3/95

Items with code on the **green** background are available in stock

➜ 2D and 3D files available on **www.pizzato.it**

ES AC32012

Description	Characteristics			Diagram
Pushbutton - 1NO E2 1PU2R221L9	Flush, spring-return, white			
Contacts 1x E2 CF10G2V1	pos 2 /	pos 3 1NO	pos 1 /	E--
Pushbutton - 1NO E2 1PU2R121L10	Flush, spring-return, black			
Contacts 1x E2 CF10G2V1	pos 2 /	pos 3 1NO	pos 1 /	E--

ES AC32010

Description	Characteristics			Diagram
Pushbutton - 1NO E2 1PU2R421L35	Flush, spring-return, green			
Contacts 1x E2 CF10G2V1	pos 2 /	pos 3 1NO	pos 1 /	E--
Pushbutton - 1NC E2 1PU2S321L1	Projecting, spring-return, red			
Contacts 1x E2 CF01G2V1	pos 2 /	pos 3 1NC ⊖	pos 1 /	E--

ES AC32011

Description	Characteristics			Diagram
Pushbutton - 1NO E2 1PU2R421L51	Flush, spring-return, green			
Contacts 1x E2 CF10G2V1	pos 2 /	pos 3 1NO	pos 1 /	E--
Pushbutton - 1NC E2 1PU2S321L48	Projecting, spring-return, red			
Contacts 1x E2 CF01G2V1	pos 2 /	pos 3 1NC ⊖	pos 1 /	E--

ES AC33017

Description	Characteristics			Diagram
Pushbutton - 1NO E2 1PU2R221L9	Flush, spring-return, white			
Contacts 1x E2 CF10G2V1	pos 2 /	pos 3 1NO	pos 1 /	E--
Pushbutton - 1NC E2 1PU2S321L1	Projecting, spring-return, red			
Contacts 1x E2 CF01G2V1	pos 2 /	pos 3 1NC ⊖	pos 1 /	E--
Pushbutton - 1NO E2 1PU2R121L10	Flush, spring-return, black			
Contacts 1x E2 CF10G2V1	pos 2 /	pos 3 1NO	pos 1 /	E--

ES AC33013

Description	Characteristics			Diagram
Indicator light E2 1ILA310 + E2 LF1A3V1	Red indicator light 12 ... 30 Vac/dc			⊗ LED
Pushbutton - 1NO E2 1PU2R421L35	Flush, spring-return, green			
Contacts 1x E2 CF10G2V1	pos 2 /	pos 3 1NO	pos 1 /	E--
Pushbutton - 1NC E2 1PU2S321L1	Projecting, spring-return, red			
Contacts 1x E2 CF01G2V1	pos 2 /	pos 3 1NC ⊖	pos 1 /	E--

ES AC33016

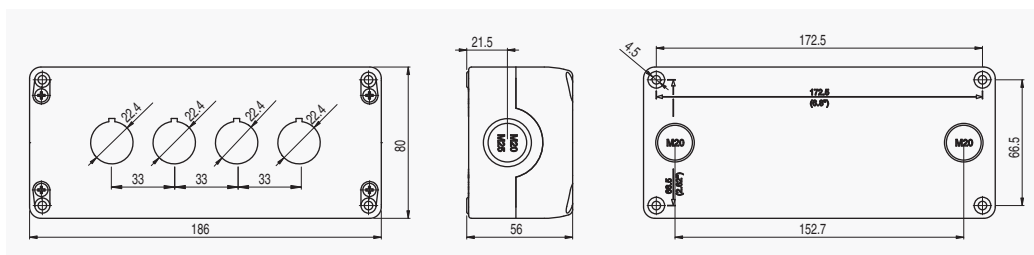| Description	Characteristics			Diagram
Pushbutton - 1NO E2 1PU2R421L35	Flush, spring-return, green			
Contacts 1x E2 CF10G2V1	pos 2 /	pos 3 1NO	pos 1 /	E--
Pushbutton - 1NC E2 1PU2S321L1	Projecting, spring-return, red			
Contacts 1x E2 CF01G2V1	pos 2 /	pos 3 1NC ⊖	pos 1 /	E--
Pushbutton - 1NO E2 1PU2R421L36	Flush, spring-return, green			
Contacts 1x E2 CF10G2V1	pos 2 /	pos 3 1NO	pos 1 /	E--

Dimensions

Enclosures (1 hole)
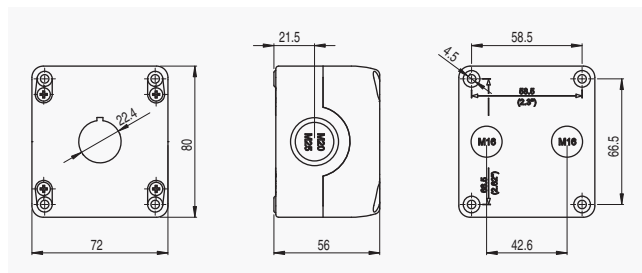
Enclosures (2 holes)
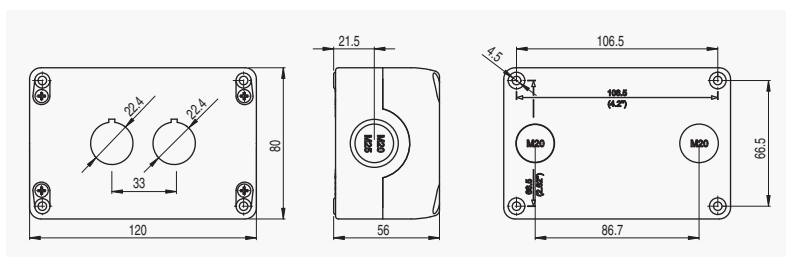
Enclosures (3 holes)
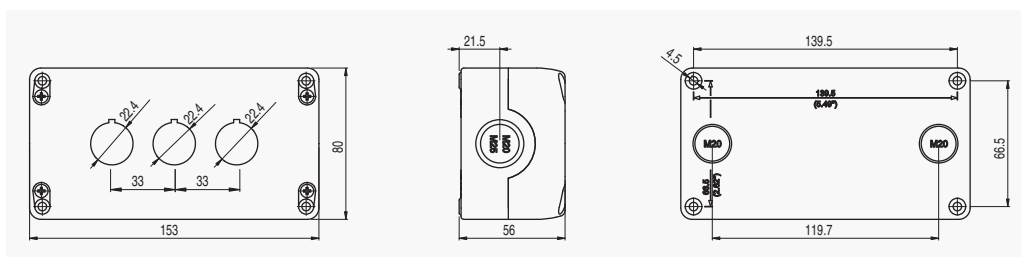
Enclosures (4 holes)

Enclosures (6 holes)