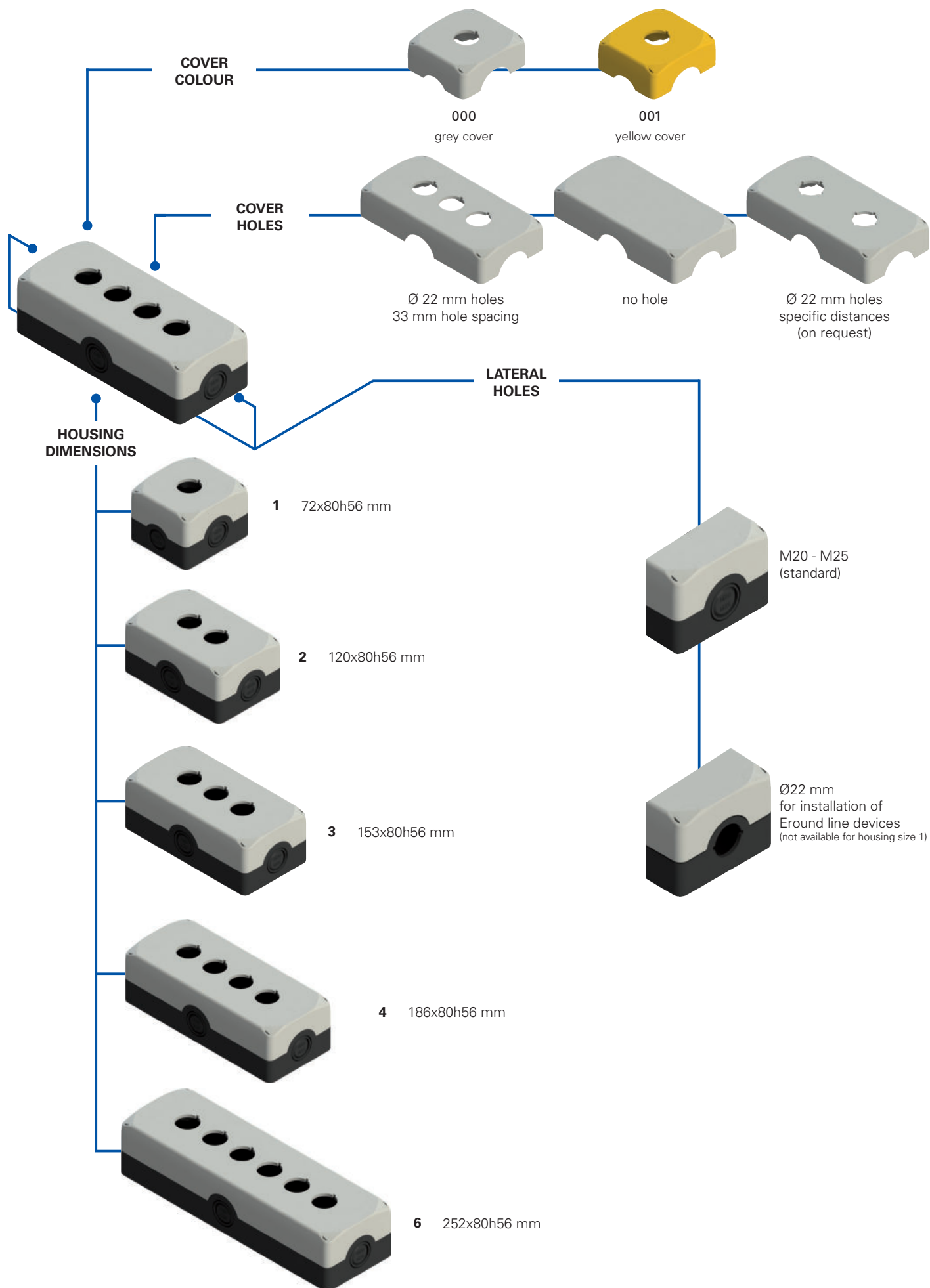


Selection diagram



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

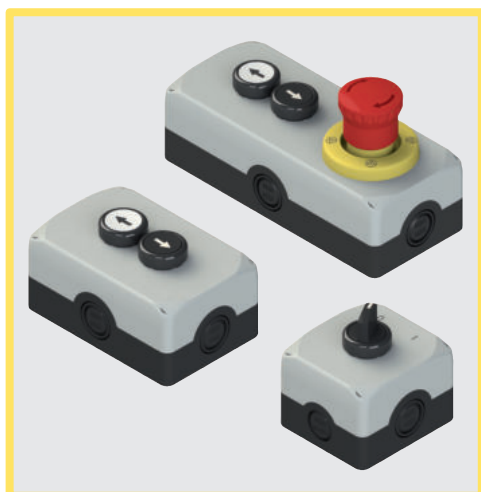
# ES 31000

| Body material |                             |
|---------------|-----------------------------|
| <b>3</b>      | polycarbonate PC (standard) |

| Housing dimensions |              |
|--------------------|--------------|
| <b>1</b>           | 72x80h56 mm  |
| <b>2</b>           | 120x80h56 mm |
| <b>3</b>           | 153x80h56 mm |
| <b>4</b>           | 186x80h56 mm |
| <b>6</b>           | 252x80h56 mm |

| Configuration |                          |
|---------------|--------------------------|
| <b>000</b>    | black base, grey cover   |
| <b>001</b>    | black base, yellow cover |
| ...           | .....                    |

Other combinations on request.



### Main features

- Protection degrees IP67 and IP69K
- Stainless steel captive screws
- 4 side cable entries
- Screw caps included in the scope of supply

### Quality marks:



EAC approval:

RU C-IT.YT03.B.00035/19

### Technical data

#### Housing

Material:

Self-extinguishing shock-proof polycarbonate with double insulation, UV-resistant and glass fibre reinforced, high shock resistance.

Material of the screws:

Stainless steel

Protection degree:

IP67 acc. to EN 60529

IP69K acc. to ISO 20653 (cable gland of equal or higher protection degree)

Conduit entries:

Housing (1 hole):

4x knock-out side entries:  
2x M20 - 1/2 NPT, 2x M20 - 1/2 NPT - M25  
2x M16 knock-out base entries

Housings with 2-3-4-6 holes:

4x knock-out side entries:

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

Device installation:

Suitable for the installation of Ø 22 mm control and signalling devices.

Ø 22 mm hole acc. to EN 60947-5-1

Utilization requirements:

See page 163

### General data

Ambient temperature:

-40°C ... +80°C

Tightening torque of the cover screws: 1 ... 1.4 Nm

### In compliance with standards:

IEC 60947-1, IEC 60947-5-1, IEC 60204-1, EN 60947-1, EN 60947-5-1, EN 60204-1, EN IEC 63000.

### Compliance with the requirements of:

Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU, RoHS Directive 2011/65/EU.

### General data

#### Protection degrees IP67 and IP69K

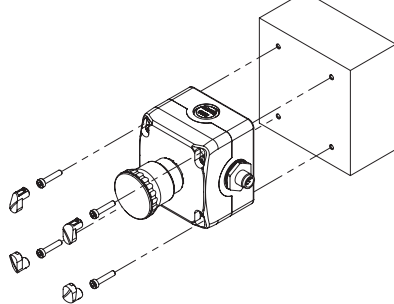
**IP69K**  
**IP67**

These devices are designed to be used in the toughest environmental conditions and they pass the IP67 immersion test acc. to EN 60529. They can therefore be used in all environments where maximum protection degree of the housing is required. Due to their special design,

these devices are suitable for use in equipment subjected to cleaning with high pressure hot water jets. These devices meet the IP69K test requirements according to ISO 20653 (water jets with 100 bar and 80°C).

#### Fixing of EROUND housings

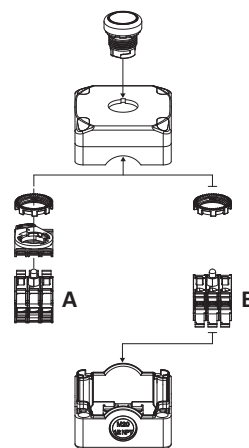
The housings of the EROUND line by Pizzato Elettrica have 4 additional holes on the cover. The holes enable wall fixing from the outside by means of insertion of the screws, without the need to open the cover to access the holes.



The wall fixing screws and the ones for closing the housing cover can be sealed with 4 caps (supplied with the housing). The caps not only give the housing a more pleasant look, but they also prevent the accumulation of dirt inside the recesses of the screws besides making tampering more difficult.

The external fixing of the housings is particularly valuable for already wired housings, since this simplifies the whole installation: you can simply fix the housing and connect the connector that, thanks to the presence of cable entries on the four sides of the housing, can be oriented in the preferred direction.

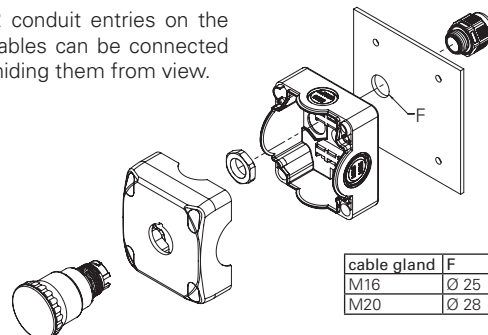
#### One housing, two solutions



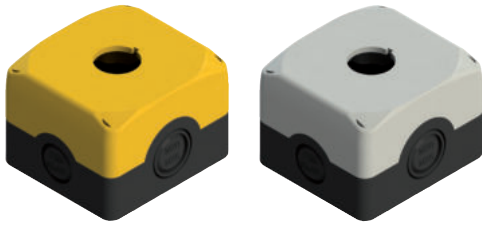
The housing can fit up to 3 contact blocks/LED units (E2 CP, E2 LP) for panel mounting by means of a mounting adapter (A) or up to 3 contact blocks/LED units (E2 CF, E2 LF) for base mounting directly on the bottom of the housing (B).



#### Wiring through the lower surface

Housings have 2 conduit entries on the lower surface. Cables can be connected via this surface, hiding them from view.



**Selection table for housings**






| Cover colour  | Article  | Ø 22 mm hole |
|---|----------|--------------|
|  yellow RAL 1003 | ES 31001 | 1            |
|  grey RAL 7035   | ES 31000 | 1            |






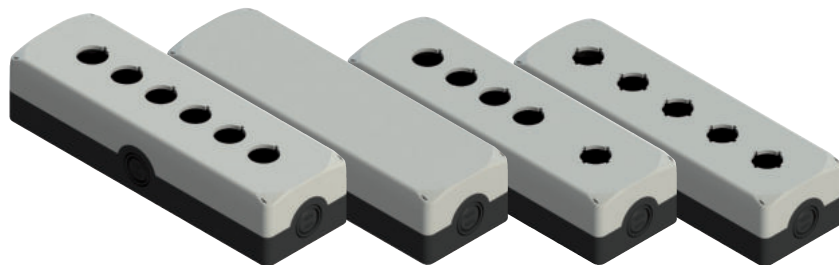
| Cover colour  | Article  | Ø 22 mm hole |
|---|----------|--------------|
|  grey RAL 7035 | ES 32000 | 2            |
|  grey RAL 7035 | ES 32002 | 0            |







| Cover colour  | Article  | Ø 22 mm hole |
|---|----------|--------------|
|  grey RAL 7035 | ES 33000 | 3            |
|  grey RAL 7035 | ES 33002 | 0            |
|  grey RAL 7035 | ES 33003 | 2            |



| Cover colour  | Article  | Ø 22 mm hole |
|---|----------|--------------|
|  grey RAL 7035 | ES 34000 | 4            |
|  grey RAL 7035 | ES 34002 | 0            |
|  grey RAL 7035 | ES 34003 | 3            |



| Cover colour  | Article  | Ø 22 mm hole  |
|---|----------|---------------|
|  grey RAL 7035 | ES 36000 | 6             |
|  grey RAL 7035 | ES 36002 | 0             |
|  grey RAL 7035 | ES 36003 | 5             |
|  grey RAL 7035 | ES 36012 | 5 equidistant |

Note: Item ES 36012 compatible with panel-mounted contact blocks only.

## Complete control device units ES AC31...



| Housing cover colour | Actuator colour and engraving | Contacts |        |        | Flush button<br>black bezel                                  | Projecting button<br>black bezel                             |
|----------------------|-------------------------------|----------|--------|--------|--|--|
|                      |                               | pos. 2   | pos. 3 | pos. 1 |  |  |
| grey RAL 7035        | green                         | -        | 1NO    | -      | <b>ES AC31001</b><br>ES 31000 + E2 1PU2R421L2 + E2 CF10G2V1  | -  |
| grey RAL 7035        | red                           | -        | 1NC    | -      | <b>ES AC31002</b><br>ES 31000 + E2 1PU2R321L1 + E2 CF01G2V1  | <b>ES AC31017</b><br>ES 31000 + E2 1PU2S321L1 + E2 CF01G2V1  |
| grey RAL 7035        | green                         | -        | 1NO    | -      | <b>ES AC31015</b><br>ES 31000 + E2 1PU2R421GB1 + E2 CF10G2V1 | -  |
| grey RAL 7035        | red                           | -        | 1NC    | -      | <b>ES AC31016</b><br>ES 31000 + E2 1PU2R321GB0 + E2 CF01G2V1 | <b>ES AC31018</b><br>ES 31000 + E2 1PU2S321GB0 + E2 CF01G2V1 |

Other combinations on request.

→ For data regarding contact blocks, please see the respective chapters.



| Housing cover colour | Positions | Contacts |        |        | Black selector switch with 2 positions<br>black bezel         |
|----------------------|-----------|----------|--------|--------|---|
|                      |           | pos. 2   | pos. 3 | pos. 1 |   |
| grey RAL 7035        | ↙         | -        | 1NO    | -      | <b>ES AC31019</b><br>ES 31002 + E2 1SE12AVA11AB + E2 CF10G2V1 |

Other combinations on request.

→ For data regarding contact blocks, please see the respective chapters.

| Housing cover colour | Positions | Contacts |        |        | Black key selector switch with 2 positions<br>black bezel    |
|----------------------|-----------|----------|--------|--------|--|
|                      |           | pos. 2   | pos. 3 | pos. 1 |  |
| grey RAL 7035        | ↙         | -        | 1NO    | -      | <b>ES AC31020</b><br>ES 31000 + E2 1SC2AVA11AE + E2 CF10G2V1 |

Other combinations on request.

**Legend** ↙ Maintained ↘ Spring-return ⚙ Key extraction position












| Housing cover colour | Actuator design and colour | Contacts |        |        | Emergency stop button<br>Push-Pull   | Emergency stop button<br>rotary release  | Emergency stop button,<br>key release  |
|----------------------|----------------------------|----------|--------|--------|--|--|--|
|                      |                            | pos. 2   | pos. 3 | pos. 1 |  |  |  |
| yellow RAL 1003      | red                        | -        | 1NC    | -      | <b>ES AC31004</b><br>ES 31001 + E2 1PEPZ4531 + E2 CF01G2V1                             | <b>ES AC31003</b><br>ES 31001 + E2 1PERZ4531 + E2 CF01G2V1                             | <b>ES AC31022</b><br>ES 31001 + E2 1PEBZ4531 + E2 CF01G2V1                             |
| yellow RAL 1003      | red                        | -        | 1NC    | -      | <b>ES AC31081</b><br>ES 31001 + E2 1PEPZ4531 + E2 CF01S2V1                             | <b>ES AC31082</b><br>ES 31001 + E2 1PERZ4531 + E2 CF01S2V1                             | <b>ES AC31083</b><br>ES 31001 + E2 1PEBZ4531 + E2 CF01S2V1                             |
| yellow RAL 1003      | red                        | 1NC      | -      | 1NC    | <b>ES AC31009</b><br>ES 31001 + E2 1PEPZ4531 + E2 CF01G2V1 + E2 CF01G2V1               | <b>ES AC31005</b><br>ES 31001 + E2 1PERZ4531 + E2 CF01G2V1 + E2 CF01G2V1               | <b>ES AC31023</b><br>ES 31001 + E2 1PEBZ4531 + E2 CF01G2V1 + E2 CF01G2V1               |
| yellow RAL 1003      | red                        | 1NC      | -      | 1NO    | <b>ES AC31010</b><br>ES 31001 + E2 1PEPZ4531 + E2 CF01G2V1 + E2 CF10G2V1               | <b>ES AC31006</b><br>ES 31001 + E2 1PERZ4531 + E2 CF01G2V1 + E2 CF10G2V1               | <b>ES AC31011</b><br>ES 31001 + E2 1PEBZ4531 + E2 CF01G2V1 + E2 CF10G2V1               |
| yellow RAL 1003      | red                        | 1NC      | 1NC    | 1NO    | <b>ES AC31146</b><br>ES 31001 + E2 1PEPZ4531 + E2 CF01G2V1 + E2 CF01G2V1 + E2 CF10G2V1 | <b>ES AC31021</b><br>ES 31001 + E2 1PERZ4531 + E2 CF01G2V1 + E2 CF01G2V1 + E2 CF10G2V1 | <b>ES AC31024</b><br>ES 31001 + E2 1PEBZ4531 + E2 CF01G2V1 + E2 CF01G2V1 + E2 CF10G2V1 |

Other combinations on request.

→ For data regarding contact blocks, please see the respective chapters.




















| Housing cover colour  | Actuator design and colour  | Contacts |  |                  | Emergency stop button<br>Push-Pull<br>Yellow luminous disc, blinking<br>Ø 60 mm, 24 Vac/dc         | Emergency stop button<br>rotary release<br>Yellow luminous disc, blinking<br>Ø 60 mm, 24 Vac/dc    | Emergency stop button,<br>key release<br>Yellow luminous disc, blinking<br>Ø 60 mm, 24 Vac/dc      |
|---|---|----------|--|------------------|--|--|--|
|   |   | pos. 2   | pos. 3   | pos. 1           |  |  |  |
|  grey RAL 7035 |  red | 1NO      | 1NC                 | CONNECTION BLOCK | <b>ES AC31430</b><br>ES 31000 + E2 1PEPZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP01G2V1 + VE BC2PV1 | <b>ES AC31433</b><br>ES 31000 + E2 1PERZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP01G2V1 + VE BC2PV1 | <b>ES AC31436</b><br>ES 31000 + E2 1PEBZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP01G2V1 + VE BC2PV1 |
|  grey RAL 7035 |  red | 1NO      | 1NC  SELF-MONITORED | CONNECTION BLOCK | <b>ES AC31431</b><br>ES 31000 + E2 1PEPZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP01S2V1 + VE BC2PV1 | <b>ES AC31434</b><br>ES 31000 + E2 1PERZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP01S2V1 + VE BC2PV1 | <b>ES AC31437</b><br>ES 31000 + E2 1PEBZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP01S2V1 + VE BC2PV1 |
|  grey RAL 7035 |  red | 1NO      | 2NC                 | CONNECTION BLOCK | <b>ES AC31432</b><br>ES 31000 + E2 1PEPZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP02G2V1 + VE BC2PV1 | <b>ES AC31435</b><br>ES 31000 + E2 1PERZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP02G2V1 + VE BC2PV1 | <b>ES AC31438</b><br>ES 31000 + E2 1PEBZ4531 + VE DL1A5L13 + E2 CP10G2V1 + E2 CP02G2V1 + VE BC2PV1 |

Other combinations on request.  
 → For data regarding contact blocks and luminous discs, please see the respective chapters.

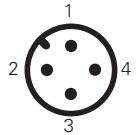
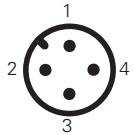
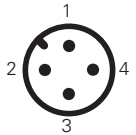
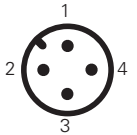
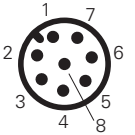
**Complete control device units ES AC31... with wired M12 connector**



| Housing cover colour  | Actuator design and colour  | Contacts  |  |   | Emergency stop button rotary release with plastic M12 connector |
|---|---|---|--|---|---|
|   |   | pos. 2  | pos. 3   | pos. 1  |   |
|  yellow RAL 1003 |  red | -   | 1NC                 | -   | <b>ES AC31025</b>   |
|  yellow RAL 1003 |  red | -   | 1NC  SELF-MONITORED | -   | <b>ES AC31084</b>   |
|  yellow RAL 1003 |  red | 1NC  | -  | 1NC  | <b>ES AC31026</b>   |
|  yellow RAL 1003 |  red | 1NC  | -  | 1NO   | <b>ES AC31027</b>   |
|  yellow RAL 1003 |  red | 1NC  | 1NC                 | 1NO   | <b>ES AC31028</b>   |

Other combinations on request.  
 → For data regarding contact blocks, please see the respective chapters.

**Wiring diagram for assembled connectors**

| ES AC31025<br>1NC   | ES AC31084<br>1NC SELF-MONITORED  | ES AC31026<br>2NC   | ES AC31027<br>1NO+1NC   | ES AC31028<br>1NO+2NC   |
|---|---|---|---|---|
|  |  |  |  |  |
| M12 connector, 4-pole   | M12 connector, 4-pole   | M12 connector, 4-pole   | M12 connector, 4-pole   | M12 connector, 8-pole   |
| <b>Contacts</b> Pin no.   | <b>Contacts</b> Pin no.   | <b>Contacts</b> Pin no.   | <b>Contacts</b> Pin no.   | <b>Contacts</b> Pin no.   |
| NC 1-2  | NC 1-2  | NC 1-2<br>NC 3-4  | NC 1-2<br>NO 3-4  | NC 3-4<br>NC 5-6<br>NO 7-8  |

**Spare caps**

| Article  | Description  |
|--|--|
|  VE TS35RA1 | 4 spare caps for ES series housing cover. Colour: yellow |
|  VE TS39RA1 | 4 spare caps for ES series housing cover. Colour: grey   |

**Accessories**

→ More ACCESSORIES on page 155

→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)



## ES AC32012

| Description   | Features  | Diagram |
|---|---|---------|
| <b>Button - 1NO</b><br>E2 1PU2R221L9<br>Contacts<br>1x E2 CF10G2V1  | flush, spring-return, white<br>pos. 2 /    pos. 3 1NO    pos. 1 / |         |
| <b>Button - 1NO</b><br>E2 1PU2R121L10<br>Contacts<br>1x E2 CF10G2V1 | flush, spring-return, black<br>pos. 2 /    pos. 3 1NO    pos. 1 / |         |



## ES AC32010

| Description   | Features   | Diagram |
|---|--|---------|
| <b>Button - 1NO</b><br>E2 1PU2R421L35<br>Contacts<br>1x E2 CF10G2V1 | flush, spring-return, green<br>pos. 2 /    pos. 3 1NO    pos. 1 /      |         |
| <b>Button - 1NC</b><br>E2 1PU2S321L1<br>Contacts<br>1x E2 CF01G2V1  | projecting, spring-return, red<br>pos. 2 /    pos. 3 1NC ⊕    pos. 1 / |         |



## ES AC33017

| Description   | Features   | Diagram |
|---|--|---------|
| <b>Button - 1NO</b><br>E2 1PU2R221L9<br>Contacts<br>1x E2 CF10G2V1  | flush, spring-return, white<br>pos. 2 /    pos. 3 1NO    pos. 1 /      |         |
| <b>Button - 1NC</b><br>E2 1PU2S321L1<br>Contacts<br>1x E2 CF01G2V1  | projecting, spring-return, red<br>pos. 2 /    pos. 3 1NC ⊕    pos. 1 / |         |
| <b>Button - 1NO</b><br>E2 1PU2R121L10<br>Contacts<br>1x E2 CF10G2V1 | flush, spring-return, black<br>pos. 2 /    pos. 3 1NO    pos. 1 /      |         |



## ES AC34035

| Description   | Features  | Diagram |
|---|---|---------|
| <b>Button - 1NO</b><br>E2 1PU2R221L9<br>Contacts<br>1x E2 CP10G2V1                        | flush, spring-return, white<br>pos. 2 /    pos. 3 1NO    pos. 1 / |         |
| <b>Button - 1NO</b><br>E2 1PU2R121L10<br>Contacts<br>1x E2 CP01G2V1                       | flush, spring-return, black<br>pos. 2 /    pos. 3 1NO    pos. 1 / |         |
| <b>Emergency stop button</b><br>E2 1PERZ4531<br>Contacts<br>1x E2 CP01G2V1+1x E2 CP10G2V1 | rotary release, red<br>pos. 2 1 NO    pos. 3 /    pos. 1 1NC ⊕    |         |
| <b>Luminous disc</b><br>VE DL1A6L13   | Yellow, continuous light<br>24 Vac/dc                             |         |



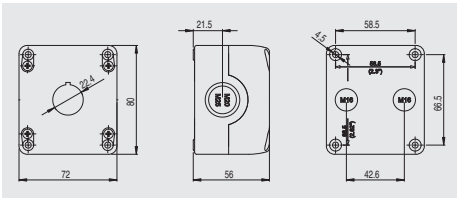
## ES AC36041

| Description  | Features   | Diagram |
|--|--|---------|
| <b>Button - 1NO</b><br>E2 1PU2F4410<br>Protection guard<br>1x VE GP32B1A<br>Contacts<br>1x E2 CP10G2V1 | mushroom, spring-return, green<br>cylindrical, black<br>pos. 2 /    pos. 3 1NO    pos. 1 / |         |
| <b>Emergency stop button - 1NC</b><br>E2 1PERZ4531<br>Contacts<br>1x E2 CP01G2V1                       | rotary release, red<br>pos. 2 /    pos. 3 1NC ⊕    pos. 1 /                                |         |
| <b>Button - 1NO</b><br>E2 1PU2F4410<br>Protection guard<br>1x VE GP32B1A<br>Contacts<br>1x E2 CP10G2V1 | mushroom, spring-return, green<br>cylindrical, black<br>pos. 2 /    pos. 3 1NO    pos. 1 / |         |

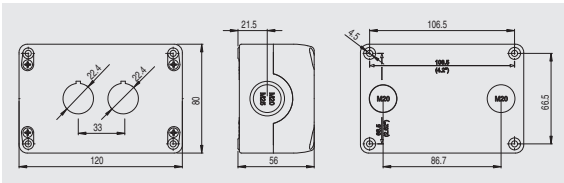
Other combinations on request.

**Dimensions**

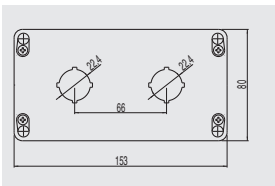
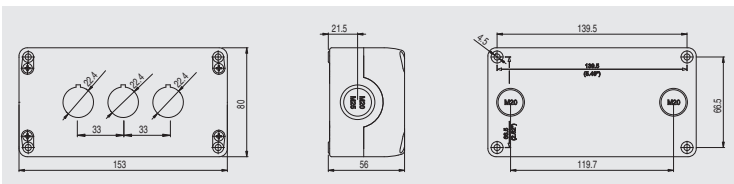
**Housings (72 x 80 h 56)**



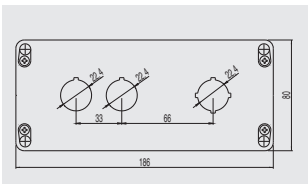
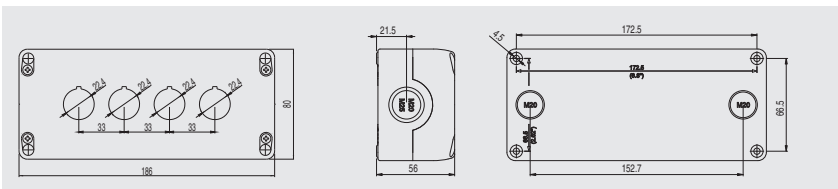
**Housings (120 x 80 h 56)**



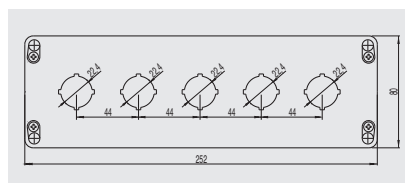
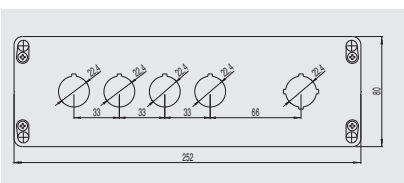
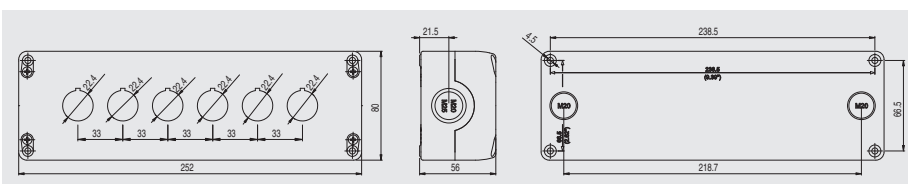
**Housings (153 x 80 h 56)**



**Housings (186 x 80 h 56)**



**Housings (252 x 80 h 56)**



All values in the drawings are in mm

→ The 2D and 3D files are available at [www.pizzato.com](http://www.pizzato.com)