

# Catalogue



edition 2010

[www.bremasersce.com](http://www.bremasersce.com)



ERSCE

position switches

safety switches

pre-wired position switches

miniaturized position switches

pushbuttons

spare parts

For over 40 years at the service of the industry

**Bremas Ersce** is formed by the merger of two well established brand names, **Bremas** and **Ersce**. These two companies are major players in the design, manufacturing and marketing of electromechanical components. With over 40 years of experience in design and manufacturing Bremas Ersce is the industrial sector leader for standard and custom control products.



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**Customer service**



**[www.bremasersce.com](http://www.bremasersce.com)**

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**Technical attendance service**



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# Quality makes our products great



## A quality choice "made in Italy"

Bremas Ersce is committed to the belief that its long term success depends on its ability to fully satisfy customers' requirements. In order to pursue such an objective Bremas Ersce manages all of the company functions in accordance with UNI EN ISO9001:2008, and all products' technical data is verified in our laboratory to ensure that they are manufactured and inspected in accordance with the most stringent standards demanded by the current legislation to guarantee performance, durability and safety.



## Customer tailored solutions

Bremas Ersce has a state of the art Research and Development facility committed to new product design and to update existing products to meet customer needs.

Bremas Ersce has developed a wide experience in the design and manufacturing of custom products for the industrial sector: our technicians constantly interact with the customers to develop solutions for every field of application and satisfy even the most specific requests.

## A widespread coverage of every market segment

Bremas Ersce products are used in a wide range of industrial applications. These include railways, food processing, tooling and welding machinery, battery chargers, industrial and passenger elevators, automatic production lines, power tools, hydraulic pumps, electricity supply systems and panel boards. Bremas Ersce has a wide range of cam switches and switch disconnectors which are able to satisfy the most different fields of application as well as limit and safety switches, push buttons and relay sockets.



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position and safety  
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pre-wired switches

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## ERSCE

### Position and safety switches

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### Pre-wired position switches

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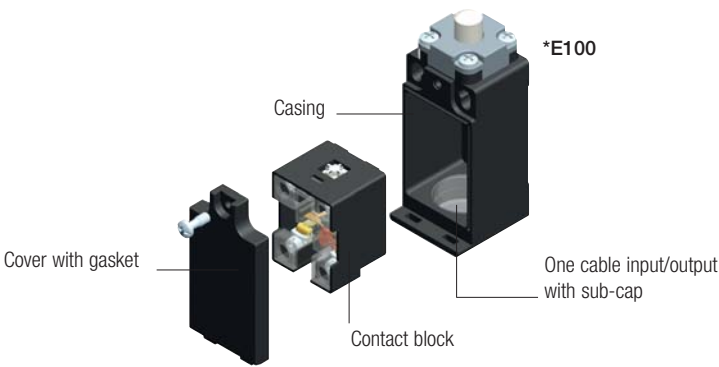
**ERSCE**

Position  
switches

Safety  
switches

Overview

The position switches are ERSCE’s main product, and are the result of more than 40 years of experience in industrial automation. They are suitable for use in the most different environmental conditions, thanks to their solid construction, IP66 certified, and proven reliability over decades of fieldwork.



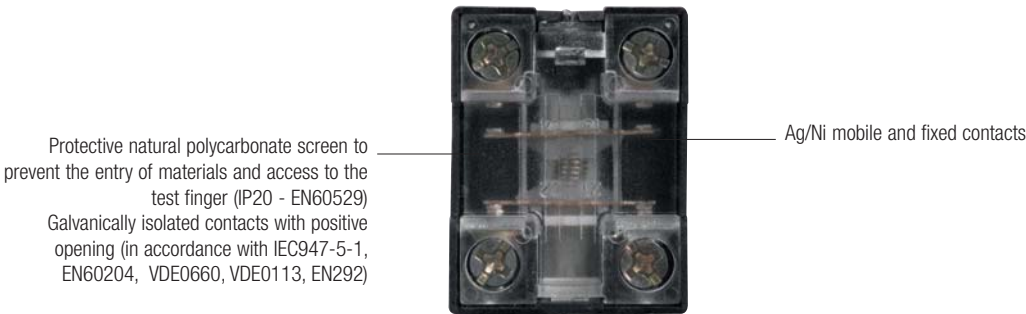
ERSCE position switches are available in 4 different series E100, E200, E300, E400, each characterized by different technical solutions and mounting options. Each series comprises a metal actuator, the casing is available in PA6 thermoplastic reinforced with fiberglass (black RAL 9005) or diecast metal alloy (in this case there is a screw for earthing the switch) painted with baked epoxy powder (gray RAL 7022).

|               | E100 | E200 | E300 | E400 |
|---------------|------|------|------|------|
| Thermoplastic | •    | •    |      | •    |
| Diecast metal | •    |      | •    | •    |

The standard thread for cable input / output is Pg 13,5. 1/2” NPT and M20 threads are available on request.

Contact blocks

For all series are available contact blocks with two contacts and positive opening of NC contact, snap action (00) or slow action (01). Thanks to the careful design and to the use of the best materials, all ERSCE contact blocks are designed to offer maximum reliability, both electrical and mechanical.



Other contact blocks are available on request (page 139)

## Actuators

There are several standard actuators available with direct, angular and multidirectional movement:



**A**  
Steel plunger



**B**  
Steel roller plunger



**C**  
Thermoplastic roller lever, side actuation



**D**  
Thermoplastic roller lever, vertical actuation



**E**  
Side rotary lever with plastic roller



**I**  
Offset side rotary lever with plastic roller



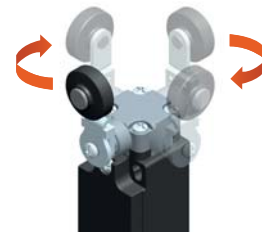
**F**  
Side rotary adjustable lever with plastic roller



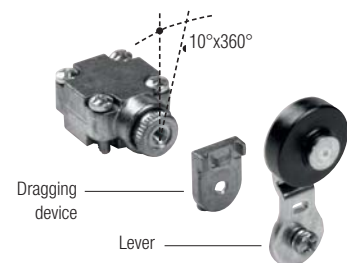
**L**  
Flexible rod

All actuators are made of diecast metal alloy.  
Other actuators are available on request.

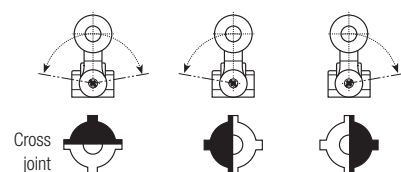
- Maximum versatility:  
all actuators are adjustable in steps of 90 °



- Possibility to adjust the lever every 10 °, for 360 °, by moving the lever and the dragging device.
- Possibility to fasten the lever on straight or reverse side, maintaining the positive opening of NC contact.



- The lever can be activated to the left or right only or in both directions by adjusting the cross joint



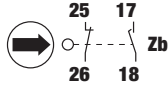
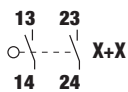
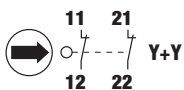
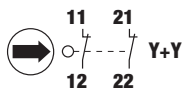
## Options on request

### Cable input / output

Position switches with thread for cable input / output M20x1,5 and 1/2 NPT are available on request.

### Contact blocks

The following contact blocks are available on request:

|                                    |    |                                                                                     |
|------------------------------------|----|-------------------------------------------------------------------------------------|
| Overlapping<br>slow action 1NO+1NC | 02 |   |
| Slow action 2NO                    | 03 |   |
| Slow action 2NC                    | 04 |   |
| Snap action 2NC                    | 05 |  |

### Actuators

Are available on request the following actuators:



**A/S1**  
Steel plunger with  
rubber gasket



**G**  
Side rotary  
adjustable plastic  
glass fiber rod  
6mm diameter



**C/S1**  
Thermoplastic roller  
lever, with rubber  
gasket, side  
actuation



**H**  
Side rotary  
adjustable  
aluminium rod  
6mm diameter



**D/S1**  
Thermoplastic  
roller lever, with  
rubber gasket,  
vertical actuation



**E/50**  
Side rotary lever  
with rubber roller  
50mm diameter



**E/RA**  
Side rotary lever  
with steel roller



**F/50**  
Side rotary  
adjustable lever  
with rubber roller  
50mm diameter

All actuators are made of diecast metal alloy.

## Technical data

|                                          |                                                 |                        |        |                                                                         |
|------------------------------------------|-------------------------------------------------|------------------------|--------|-------------------------------------------------------------------------|
| Insulation resistance                    |                                                 | 500 V DC               | MΩ     | 100                                                                     |
| Dielectric strength                      |                                                 | 50/60 Hz per 1' *      | V AC   | 2500                                                                    |
| Rated insulation voltage                 | Ui                                              | IEC947-5-1             | V AC   | 500                                                                     |
| Rated thermal current                    | Ithe                                            | IEC947-5-1             | A      | 10                                                                      |
| Rated operating current                  |                                                 | IEC947-5-1/EN60947-5-1 |        |                                                                         |
| Category AC15                            | le                                              | 24 V                   | A      | 10                                                                      |
| A300                                     |                                                 | 125 V                  | A      | 6                                                                       |
|                                          |                                                 | 230 V                  | A      | 6                                                                       |
|                                          |                                                 | 400 V                  | A      | 3                                                                       |
| Category DC13                            | le                                              | 24 V                   | A      | 6                                                                       |
| Q300                                     |                                                 | 48 V                   | A      | 4                                                                       |
|                                          |                                                 | 120 V                  | A      | 1                                                                       |
|                                          |                                                 | 250 V                  | A      | 0,4                                                                     |
| Contact resistance                       | IEC255-7 cat.3                                  | initial value          | mΩ     | 25                                                                      |
| Short circuit protective devices         | IEC269 (IEC947-5-1)                             |                        |        |                                                                         |
|                                          | gl or gG type fuse                              |                        | A      | 10                                                                      |
| Rated conditionals short circuit current | IEC947-5-1                                      |                        | A      | 1000                                                                    |
| Pollution degree                         | IEC947-5-1                                      |                        |        | 3                                                                       |
| Protection degree                        | EN 60529                                        |                        | IP     | 66                                                                      |
| Protection against electric shock        |                                                 | plastic                | class  | II                                                                      |
|                                          |                                                 | metal                  | class  | I                                                                       |
| Vibration resistance                     | IEC68-2-6                                       | mm                     |        | 0,35 ± 15%<br>(10 ÷ 55 Hz ± 1 Hz)                                       |
| Shock resistance                         | IEC68-2-27                                      | 11 ms                  | g      | 30                                                                      |
| Mechanical life                          |                                                 |                        | cycles | 15.000.000                                                              |
| Electrical life                          | a 250 V AC 6A with resistance<br>load cos φ=1   |                        | cycles | 500.000                                                                 |
|                                          | a 250 V AC 6A with resistance<br>load cos φ=0,4 |                        | cycles | 500.000                                                                 |
| Distance between contacts                | snap action type                                |                        | mm     | 2x1,25                                                                  |
|                                          | slow action type                                |                        | mm     | 2x2                                                                     |
| Terminals                                | Type                                            |                        |        | Screw with combined notch and<br>retactable plate<br>(notch Ph. Size 1) |
|                                          | Screw                                           |                        | M      | 3,5                                                                     |
|                                          | Protection degree                               |                        | IP     | 20 A                                                                    |
|                                          | Material                                        |                        |        | Steel class 8,8/ Galvanized                                             |
|                                          | Max. screw tightening torque                    | cNm (Kg cm)            |        | 120 (12,24)                                                             |
|                                          | Max connecting capacity                         | rigid cable            | mm²    | 2x1,5                                                                   |
|                                          |                                                 | flexible cable         | mm²    | 2x1,5                                                                   |
|                                          | Terminal numbering                              |                        |        | In accordance with EN50013                                              |

## Condition of use

|                         |             |    |                                         |
|-------------------------|-------------|----|-----------------------------------------|
| Air ambient temperature | operational | °C | -35 ÷ +85<br>(without formation of ice) |
| Relative humidity       | operational |    | 95% max                                 |

\* between terminals of the same polarity: between terminals with different polarity: between live mechanical parts and ground;  
between live mechanical parts and non-current-carrying metal parts

## Position and safety switches

### ■ International standards and approvals

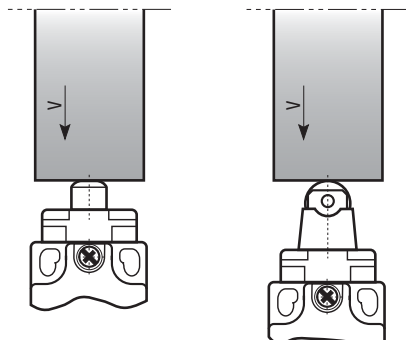
| Country                                 | Authority                                    | Mark of standard                                                                    | E100 | E200 | E300 | E400 |
|-----------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------|------|------|------|------|
| USA / Canada                            | UL investigated according to CSA             |  1 | •    | •    | •    | •    |
|                                         |                                              |  1 |      |      |      |      |
| Canada                                  | CSA International                            |  2 | •    | •    | •    | •    |
| Germany                                 | Verband Deutscher Elektrotechniker           | VDE 0660 3                                                                          | +    | +    | +    | +    |
| Switzerland                             | Schweizerischer Elektrotechnischer Verein    |    | +    | +    | +    | +    |
| Denmark                                 | Danmarks Elektriske Materielkontrol          |   | +    | +    | +    | +    |
| Norway                                  | Norges Elektriske Materielkontrol            |  | +    | +    | +    | +    |
| Sweden                                  | Svenska Elektriske Materielkontrollanstalten |  | +    | +    | +    | +    |
| Finland                                 | Sähötar-kastuskeskus                         |  | +    | +    | +    | +    |
| Austria                                 | Österreichischer Verband für Elektrotechnik  |  | +    | +    | +    | +    |
| Great Britain                           | British Standards Institution                | BS EN 60947 3                                                                       | +    | +    | +    | +    |
| IEC International electrical Commission |                                              | IEC 60947 4                                                                         | +    | +    | +    | +    |
| Russian Federation                      | GOST                                         |  | •    | •    | •    | •    |

- Approved
- + conforms to requirements

#### Notes:

- 1) UL Approval File E728661
- 2) CSA Approval File 026716-0-000
- 3) It is not required to bear a symbol but switches must conform to requirements.
- 4) IEC does not operate an approval scheme

## Operating features



### Plunger, Roller plunger, vertical travel

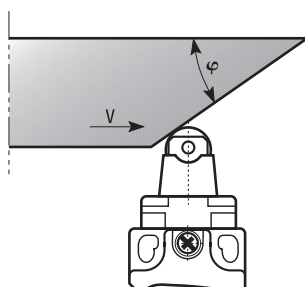
Actuators: A-B

Drive cam operating parameters

|        | V max (m/s) |
|--------|-------------|
| Act. A | 0,5         |
| Act. B | 0,5         |

Drive forces

|                              |      |
|------------------------------|------|
| Minimum command force        | 9 N  |
| Minimum forced opening force | 28 N |



### Roller plunger, side travel

Actuator: B

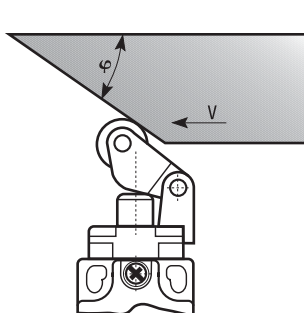
Drive cam operating parameters

| φ   | V max (m/s) |
|-----|-------------|
| 30° | 0,5         |
| 20° | 1           |

Drive forces

|                              |      |
|------------------------------|------|
| Minimum command force        | 9 N  |
| Minimum forced opening force | 28 N |

## Operating features



### Roller lever, side travel

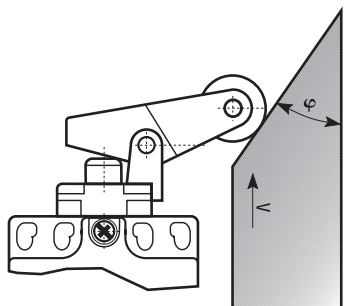
Actuator: C

Drive cam operating parameters

| $\varphi$ | V max (m/s) |
|-----------|-------------|
| 30°       | 0,5         |
| 20°       | 1           |

Drive forces

|                              |      |
|------------------------------|------|
| Minimum command force        | 9 N  |
| Minimum forced opening force | 26 N |



### Roller lever, vertical travel

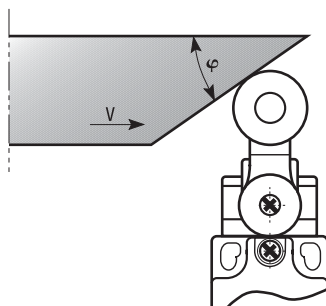
Actuator: D

Drive cam operating parameters

| $\varphi$ | V max (m/s) |
|-----------|-------------|
| 30°       | 0,5         |
| 20°       | 1           |

Drive forces

|                              |      |
|------------------------------|------|
| Minimum command force        | 8 N  |
| Minimum forced opening force | 26 N |



### Roller lever

Actuators: E-I-F

Drive cam operating parameters

| $\varphi$ | V max (m/s) |
|-----------|-------------|
| 30°       | 1,5         |
| 45°       | 1           |
| 60°       | 0,75        |
| 60°-90°   | 0,25        |

Drive forces (E100-E200-E300)

|                              |        |
|------------------------------|--------|
| Minimum command force        | 15 cNm |
| Minimum forced opening force | 35 cNm |

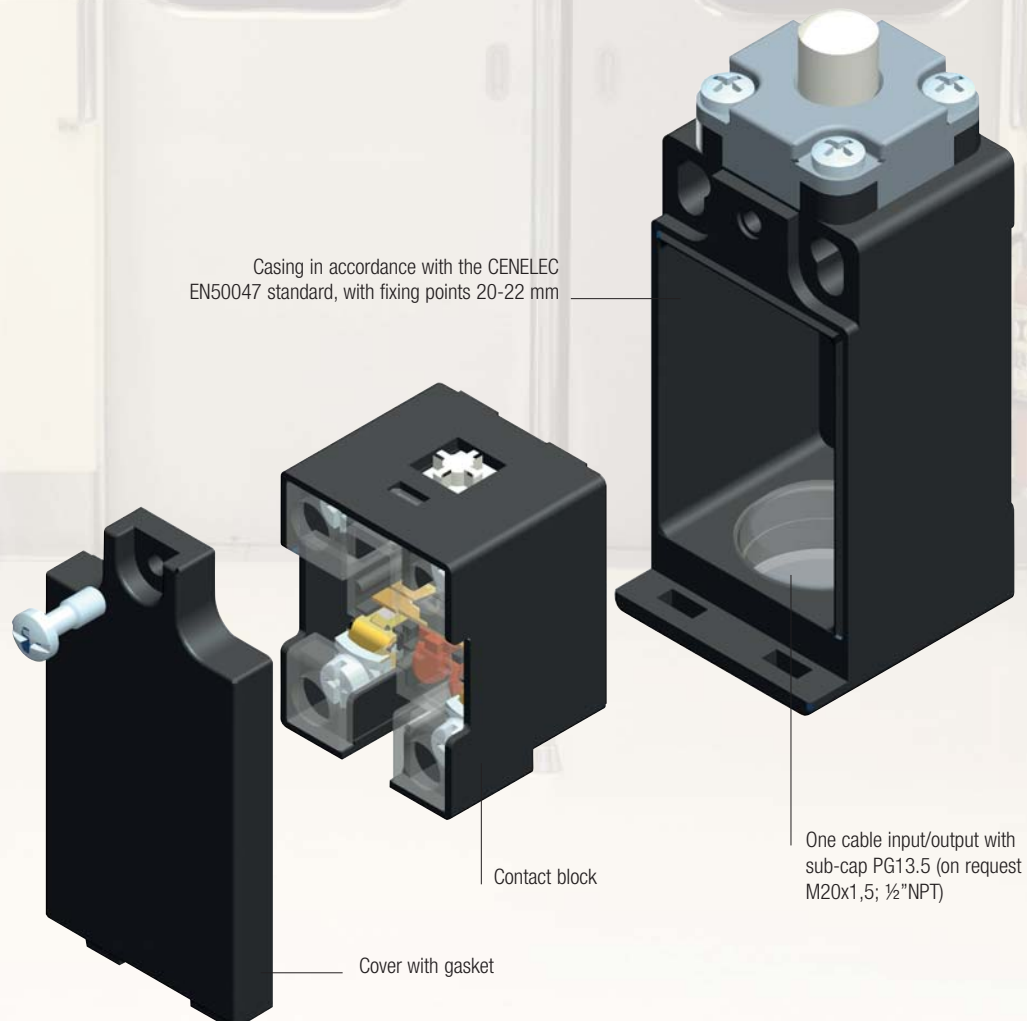
Drive forces (E400)

|                              |        |
|------------------------------|--------|
| Minimum command force        | 25 cNm |
| Minimum forced opening force | 45 cNm |



The **E100** series is the most compact of ERSCE position switches. Dimensions are in accordance with CENELEC EN50047 that provides two fixing holes with distance 20 or 22mm. There is one hole for input / output cables on the bottom of the switch. Available with thermoplastic or diecast metal alloy casing.

Casing in accordance with the CENELEC EN50047 standard, with fixing points 20-22 mm



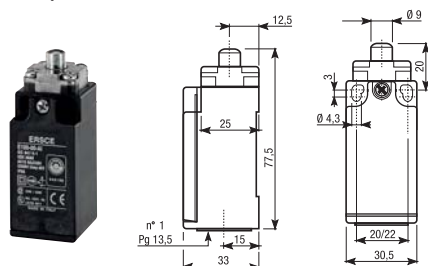
Contact block

Cover with gasket

One cable input/output with sub-cap PG13.5 (on request M20x1,5; ½"NPT)

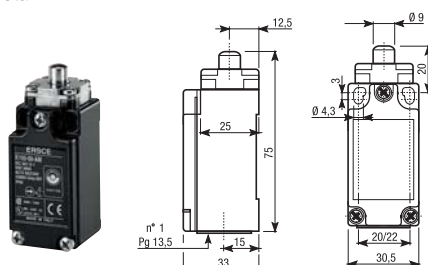
## Steel plunger

### Thermoplastic



| Part no. | Type       | Contact block          | Circuit diagram | Contact travel | Pack. |
|----------|------------|------------------------|-----------------|----------------|-------|
| ER800010 | E100-00-AI | Snap action<br>1NO+1NC | 00              |                | 1     |
| ER800570 | E100-01-AI | Slow action<br>1NO+1NC | 01              |                | 1     |

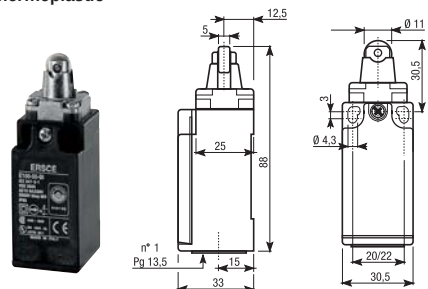
### Metal



|          |            |                        |    |  |   |
|----------|------------|------------------------|----|--|---|
| ER800020 | E100-00-AM | Snap action<br>1NO+1NC | 00 |  | 1 |
| ER800580 | E100-01-AM | Slow action<br>1NO+1NC | 01 |  | 1 |

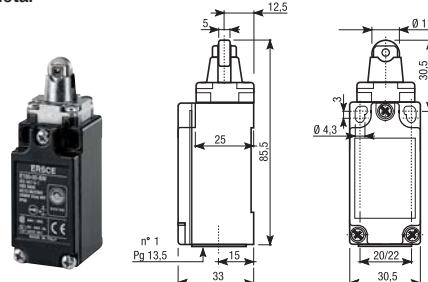
## Steel roller plunger

### Thermoplastic



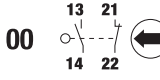
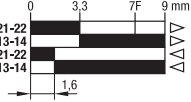
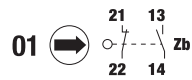
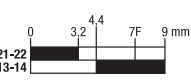
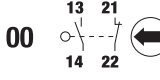
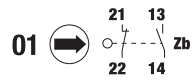
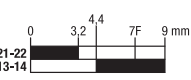
|          |            |                        |    |  |   |
|----------|------------|------------------------|----|--|---|
| ER800030 | E100-00-BI | Snap action<br>1NO+1NC | 00 |  | 1 |
| ER800590 | E100-01-BI | Slow action<br>1NO+1NC | 01 |  | 1 |

### Metal

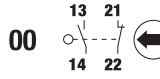
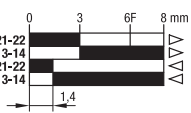
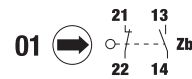
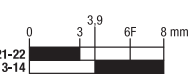
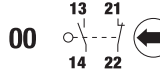
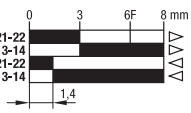
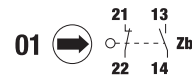
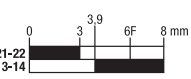


|          |            |                        |    |  |   |
|----------|------------|------------------------|----|--|---|
| ER800040 | E100-00-BM | Snap action<br>1NO+1NC | 00 |  | 1 |
| ER800600 | E100-01-BM | Slow action<br>1NO+1NC | 01 |  | 1 |

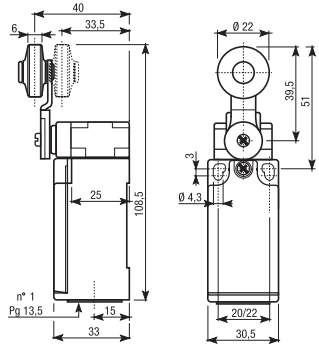
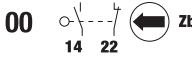
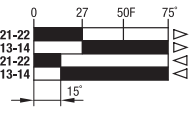
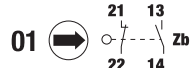
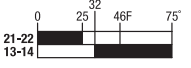
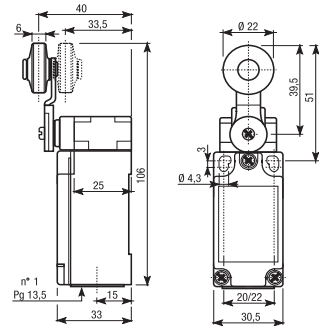
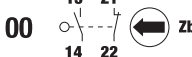
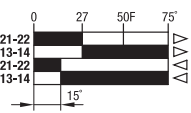
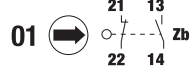
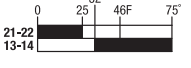
## Thermoplastic roller lever, side actuation

|                                                                                                           | Part no. | Type       | Contact block          | Circuit diagram                                                                        | Contact travel                                                                       | Pack. |
|-----------------------------------------------------------------------------------------------------------|----------|------------|------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------|
| <b>Thermoplastic</b><br> | ER800050 | E100-00-CI | Snap action<br>1NO+1NC | 00   |   | 1     |
|                                                                                                           | ER800610 | E100-01-CI | Slow action<br>1NO+1NC | 01   |   | 1     |
| <b>Metal</b><br>        | ER800060 | E100-00-CM | Snap action<br>1NO+1NC | 00   |   | 1     |
|                                                                                                           | ER800620 | E100-01-CM | Slow action<br>1NO+1NC | 01  |  | 1     |

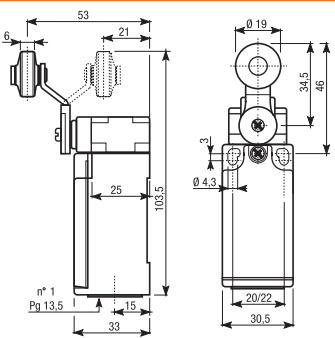
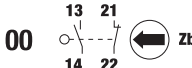
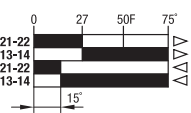
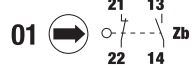
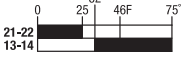
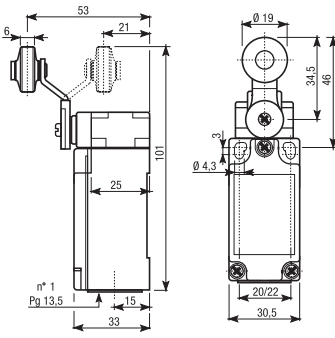
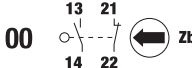
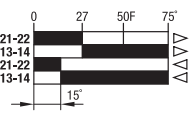
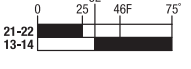
## Thermoplastic roller lever, vertical actuation

|                                                                                                             | Part no. | Type       | Contact block          | Circuit diagram                                                                         | Contact travel                                                                        | Pack. |
|-------------------------------------------------------------------------------------------------------------|----------|------------|------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
| <b>Thermoplastic</b><br> | ER800070 | E100-00-DI | Snap action<br>1NO+1NC | 00  |  | 1     |
|                                                                                                             | ER800630 | E100-01-DI | Slow action<br>1NO+1NC | 01  |  | 1     |
| <b>Metal</b><br>         | ER800080 | E100-00-DM | Snap action<br>1NO+1NC | 00  |  | 1     |
|                                                                                                             | ER800640 | E100-01-DM | Slow action<br>1NO+1NC | 01  |  | 1     |

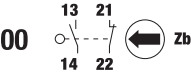
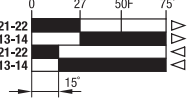
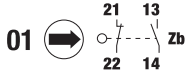
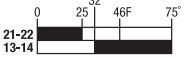
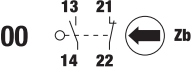
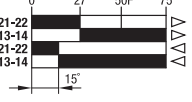
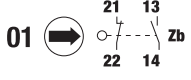
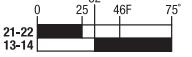
## Side rotary lever with plastic roller

|                                                                                                           | Part no.                                                                           | Type     | Contact block                        | Circuit diagram                                                                           | Contact travel                                                                        | Pack. |
|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------|--------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
| <b>Thermoplastic</b><br> |   | ER800090 | E100-00-EI<br>Snap action<br>1NO+1NC | 00<br>  |    | 1     |
|                                                                                                           |                                                                                    | ER800650 | E100-01-EI<br>Slow action<br>1NO+1NC | 01<br>  |    | 1     |
| <b>Metal</b><br>        |  | ER800100 | E100-00-EM<br>Snap action<br>1NO+1NC | 00<br>  |    | 1     |
|                                                                                                           |                                                                                    | ER800660 | E100-01-EM<br>Slow action<br>1NO+1NC | 01<br> |  | 1     |

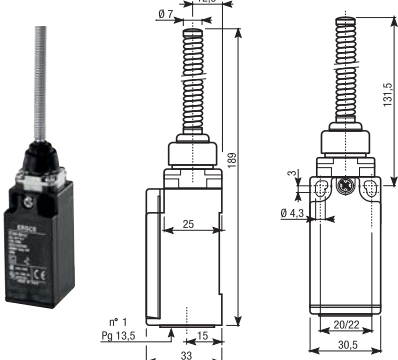
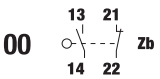
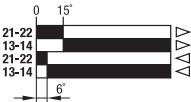
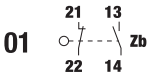
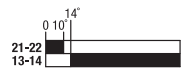
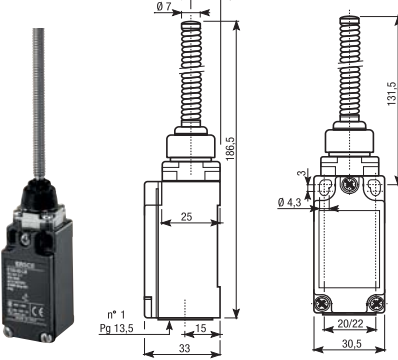
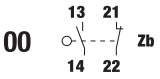
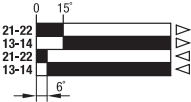
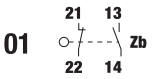
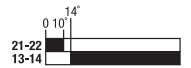
## Offset side rotary lever with plastic roller

|                                                                                                             | Part no.                                                                            | Type     | Contact block                        | Circuit diagram                                                                            | Contact travel                                                                        | Pack. |
|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------|--------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
| <b>Thermoplastic</b><br> |  | ER800170 | E100-00-II<br>Snap action<br>1NO+1NC | 00<br> |  | 1     |
|                                                                                                             |                                                                                     | ER800730 | E100-01-II<br>Slow action<br>1NO+1NC | 01<br> |  | 1     |
| <b>Metal</b><br>         |  | ER800180 | E100-00-IM<br>Snap action<br>1NO+1NC | 00<br> |  | 1     |
|                                                                                                             |                                                                                     | ER800740 | E100-01-IM<br>Slow action<br>1NO+1NC | 01<br> |  | 1     |

## Side rotary adjustable lever with plastic roller

|                                                                                                               | Part no. | Type       | Contact block          | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|---------------------------------------------------------------------------------------------------------------|----------|------------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
| <b>Thermoplastic</b><br><br> | ER800110 | E100-00-FI | Snap action<br>1NO+1NC |    |    | 1     |
|                                                                                                               | ER800670 | E100-01-FI | Slow action<br>1NO+1NC |    |    | 1     |
| <b>Metal</b><br><br>        | ER800120 | E100-00-FM | Snap action<br>1NO+1NC |    |    | 1     |
|                                                                                                               | ER800680 | E100-01-FM | Slow action<br>1NO+1NC |  |  | 1     |

## Flexible rod

|                                                                                                           | Part no. | Type       | Contact block          | Circuit diagram                                                                                | Contact travel                                                                        | Pack. |
|-----------------------------------------------------------------------------------------------------------|----------|------------|------------------------|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
| <b>Thermoplastic</b><br> | ER800190 | E100-00-LI | Snap action<br>1NO+1NC | <b>00</b>    |    | 1     |
|                                                                                                           | ER833000 | E100-01-LI | Slow action<br>1NO+1NC | <b>01</b>    |    | 1     |
| <b>Metal</b><br>        | ER800200 | E100-00-LM | Snap action<br>1NO+1NC | <b>00</b>    |    | 1     |
|                                                                                                           | ER833200 | E100-01-LM | Slow action<br>1NO+1NC | <b>01</b>  |  | 1     |

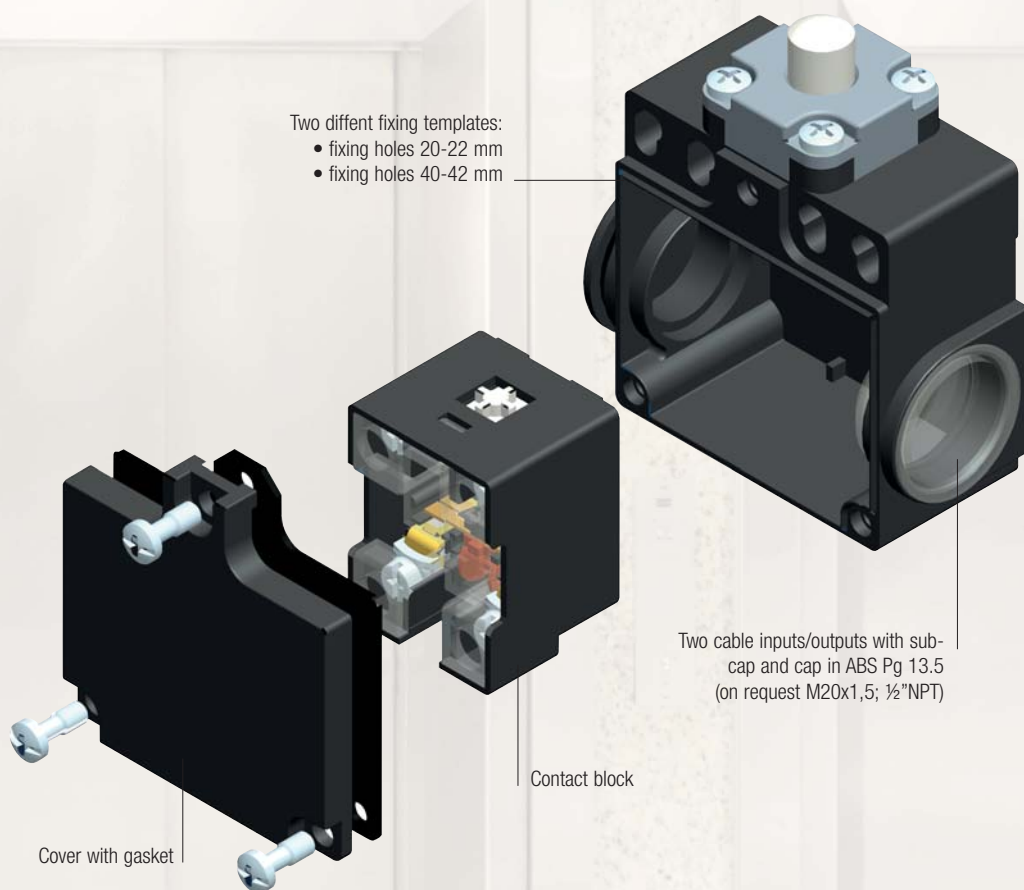


The **E200** series is designed for maximum installation flexibility, it has two different fixing templates to maintain compatibility with both E100 series (fixing holes distance 20-22mm) and E300 series (fixing holes distance 40-42 mm).

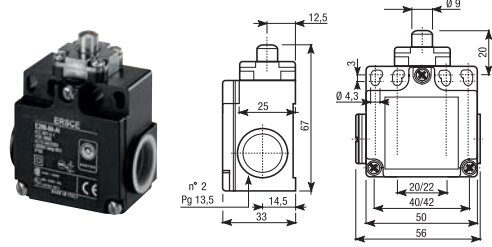
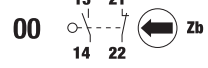
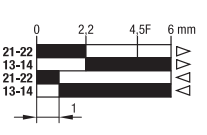
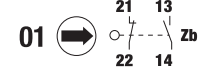
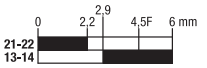
E200 series provides 2 cable inputs / outputs on both sides of the switch and is available with thermoplastic casing only.

Two different fixing templates:

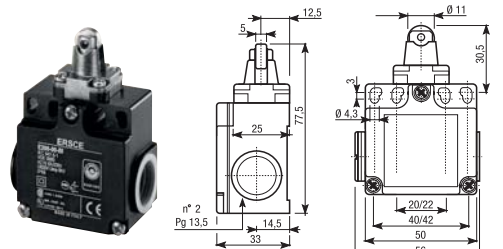
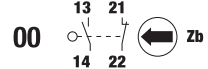
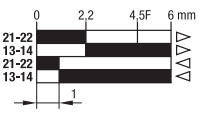
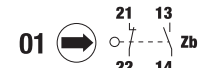
- fixing holes 20-22 mm
- fixing holes 40-42 mm



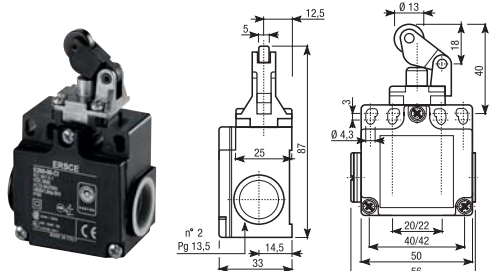
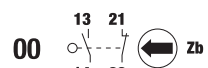
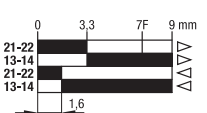
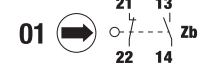
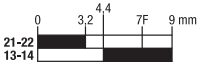
## Steel plunger

|                                                                                  | Part no. | Type       | Contact block          | Circuit diagram                                                                    | Contact travel                                                                      | Pack. |
|----------------------------------------------------------------------------------|----------|------------|------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------|
|  | ER830000 | E200-00-AI | Snap action<br>1NO+1NC |  |  | 1     |
|                                                                                  | ER830010 | E200-01-AI | Slow action<br>1NO+1NC |  |  | 1     |

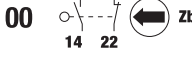
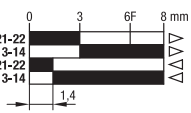
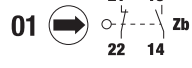
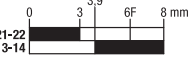
## Steel roller plunger

|                                                                                    | Part no. | Type       | Contact block          | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|------------------------------------------------------------------------------------|----------|------------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
|  | ER830200 | E200-00-BI | Snap action<br>1NO+1NC |  |  | 1     |
|                                                                                    | ER830210 | E200-01-BI | Slow action<br>1NO+1NC |  |  | 1     |

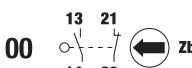
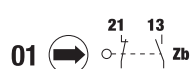
## Thermoplastic roller lever, side actuation

|                                                                                    | Part no. | Type       | Contact block          | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|------------------------------------------------------------------------------------|----------|------------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
|  | ER830300 | E200-00-CI | Snap action<br>1NO+1NC |  |  | 1     |
|                                                                                    | ER830310 | E200-01-CI | Slow action<br>1NO+1NC |  |  | 1     |

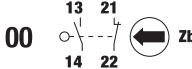
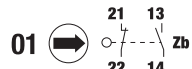
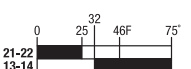
## Thermoplastic roller lever, vertical actuation

|                                                                                  | Part no. | Type       | Contact block          | Circuit diagram                                                                    | Contact travel                                                                      | Pack. |
|----------------------------------------------------------------------------------|----------|------------|------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------|
|  | ER830500 | E200-00-DI | Snap action<br>1NO+1NC |  |  | 1     |
|                                                                                  | ER830510 | E200-01-DI | Slow action<br>1NO+1NC |  |  | 1     |

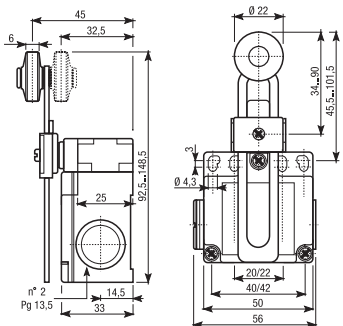
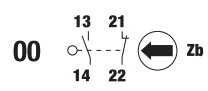
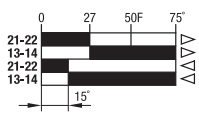
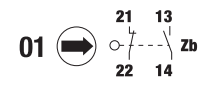
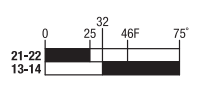
## Side rotary lever with plastic roller

|                                                                                    | Part no. | Type       | Contact block          | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|------------------------------------------------------------------------------------|----------|------------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
|  | ER830700 | E200-00-EI | Snap action<br>1NO+1NC |  |  | 1     |
|                                                                                    | ER830710 | E200-01-EI | Slow action<br>1NO+1NC |  |  | 1     |

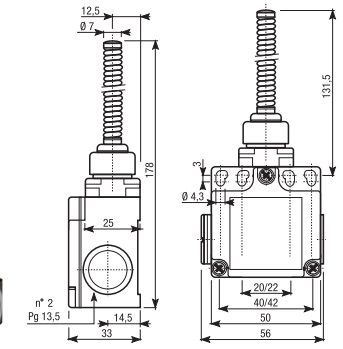
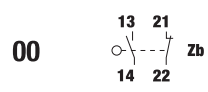
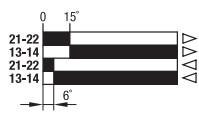
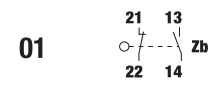
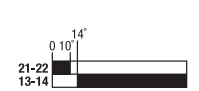
## Offset side rotary lever with plastic roller

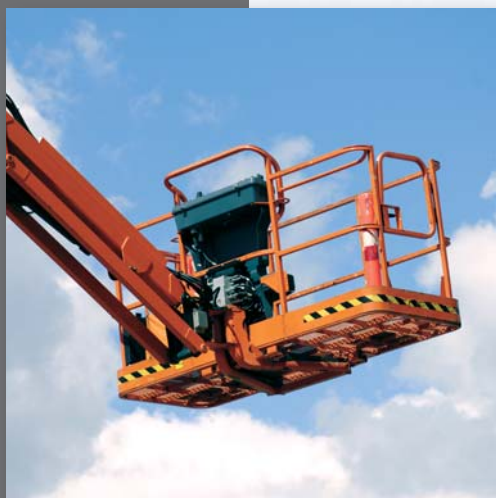
|                                                                                    | Part no. | Type       | Contact block          | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|------------------------------------------------------------------------------------|----------|------------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
|  | ER830800 | E200-00-II | Snap action<br>1NO+1NC |  |  | 1     |
|                                                                                    | ER830810 | E200-01-II | Slow action<br>1NO+1NC |  |  | 1     |

## Side rotary adjustable lever with plastic roller

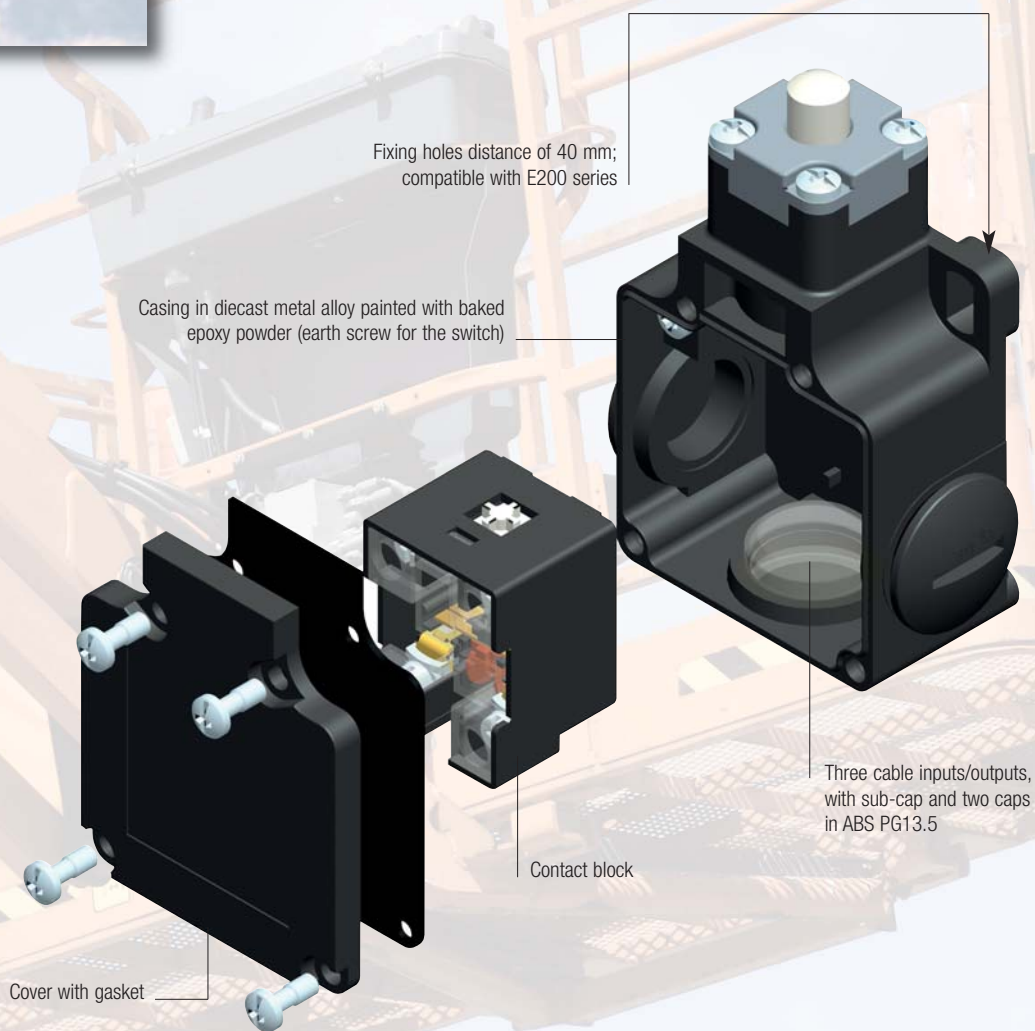
|                                                                                                                                                                    | Part no. | Type       | Contact block          | Circuit diagram                                                                    | Contact travel                                                                      | Pack. |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------|------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------|
|   | ER831100 | E200-00-FI | Snap action<br>1NO+1NC |  |  | 1     |
|                                                                                                                                                                    | ER831110 | E200-01-FI | Slow action<br>1NO+1NC |  |  | 1     |

## Flexible rod

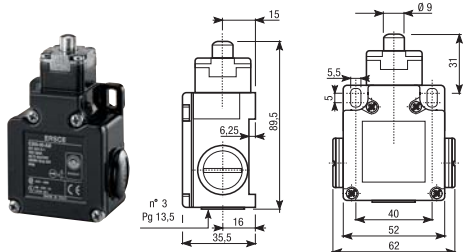
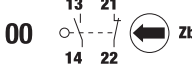
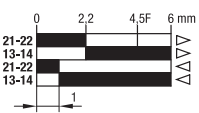
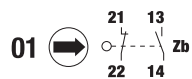
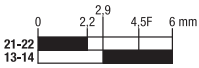
|                                                                                                                                                                        | Part no. | Type       | Contact block          | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
|   | ER831500 | E200-00-LI | Snap action<br>1NO+1NC |  |  | 1     |
|                                                                                                                                                                        | ER831510 | E200-01-LI | Slow action<br>1NO+1NC |  |  | 1     |



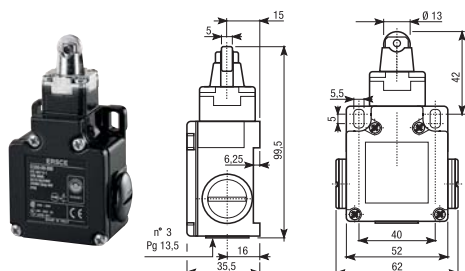
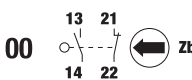
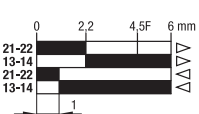
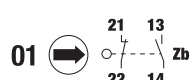
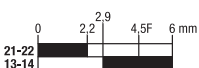
The **E300** series is designed to withstand to the most severe conditions. It has two fixing holes with distance 40mm. Each switch has three cable inputs / outputs, two on each side and one on the bottom, for maximum wiring flexibility. Available with diecast metal alloy casing.



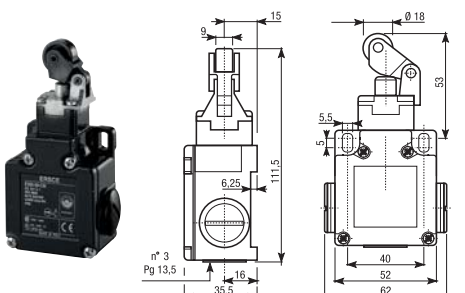
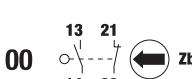
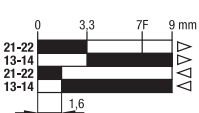
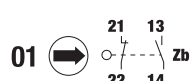
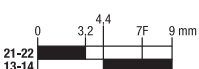
## Steel plunger

|                                                                                  | Part no. | Type       | Contact block          | Circuit diagram                                                                    | Contact travel                                                                      | Pack. |
|----------------------------------------------------------------------------------|----------|------------|------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------|
|  | ER802400 | E300-00-AM | Snap action<br>1NO+1NC |  |  | 1     |
|                                                                                  | ER802670 | E300-01-AM | Slow action<br>1NO+1NC |  |  | 1     |

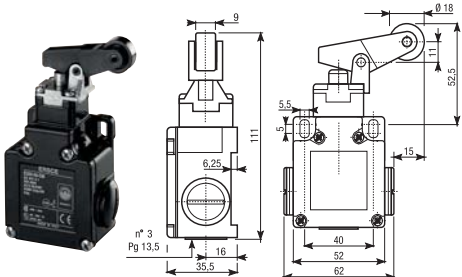
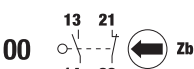
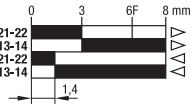
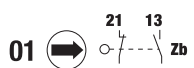
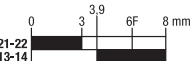
## Steel roller plunger

|                                                                                    | Part no. | Type       | Contact block          | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|------------------------------------------------------------------------------------|----------|------------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
|  | ER802390 | E300-00-BM | Snap action<br>1NO+1NC |  |  | 1     |
|                                                                                    | ER802660 | E300-01-BM | Slow action<br>1NO+1NC |  |  | 1     |

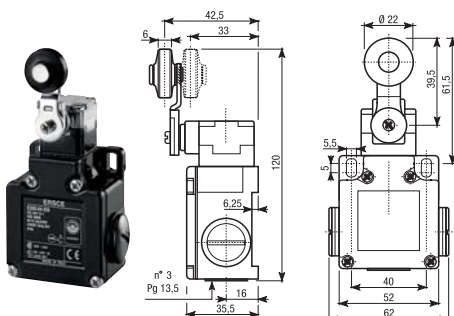
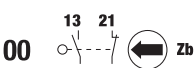
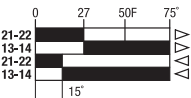
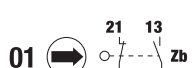
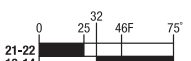
## Thermoplastic roller lever, side actuation

|                                                                                    | Part no. | Type       | Contact block          | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|------------------------------------------------------------------------------------|----------|------------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
|  | ER802380 | E300-00-CM | Snap action<br>1NO+1NC |  |  | 1     |
|                                                                                    | ER802650 | E300-01-CM | Slow action<br>1NO+1NC |  |  | 1     |

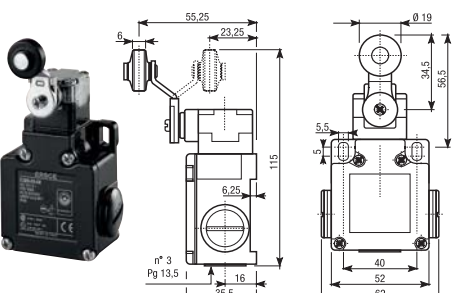
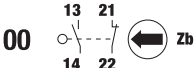
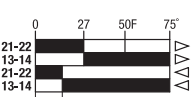
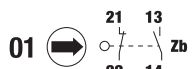
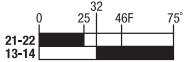
## Thermoplastic roller lever, vertical actuation

|                                                                                  | Part no. | Type       | Contact block          | Circuit diagram                                                                    | Contact travel                                                                      | Pack. |
|----------------------------------------------------------------------------------|----------|------------|------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------|
|  | ER802370 | E300-00-DM | Snap action<br>1NO+1NC |  |  | 1     |
|                                                                                  | ER802640 | E300-01-DM | Slow action<br>1NO+1NC |  |  | 1     |

## Side rotary lever with plastic roller

|                                                                                    | Part no. | Type       | Contact block          | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|------------------------------------------------------------------------------------|----------|------------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
|  | ER802360 | E300-00-EM | Snap action<br>1NO+1NC |  |  | 1     |
|                                                                                    | ER802630 | E300-01-EM | Slow action<br>1NO+1NC |  |  | 1     |

## Offset side rotary lever with plastic roller

|                                                                                    | Part no. | Type       | Contact block          | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|------------------------------------------------------------------------------------|----------|------------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
|  | ER802320 | E300-00-IM | Snap action<br>1NO+1NC |  |  | 1     |
|                                                                                    | ER802590 | E300-01-IM | Slow action<br>1NO+1NC |  |  | 1     |

## Side rotary adjustable lever with plastic roller

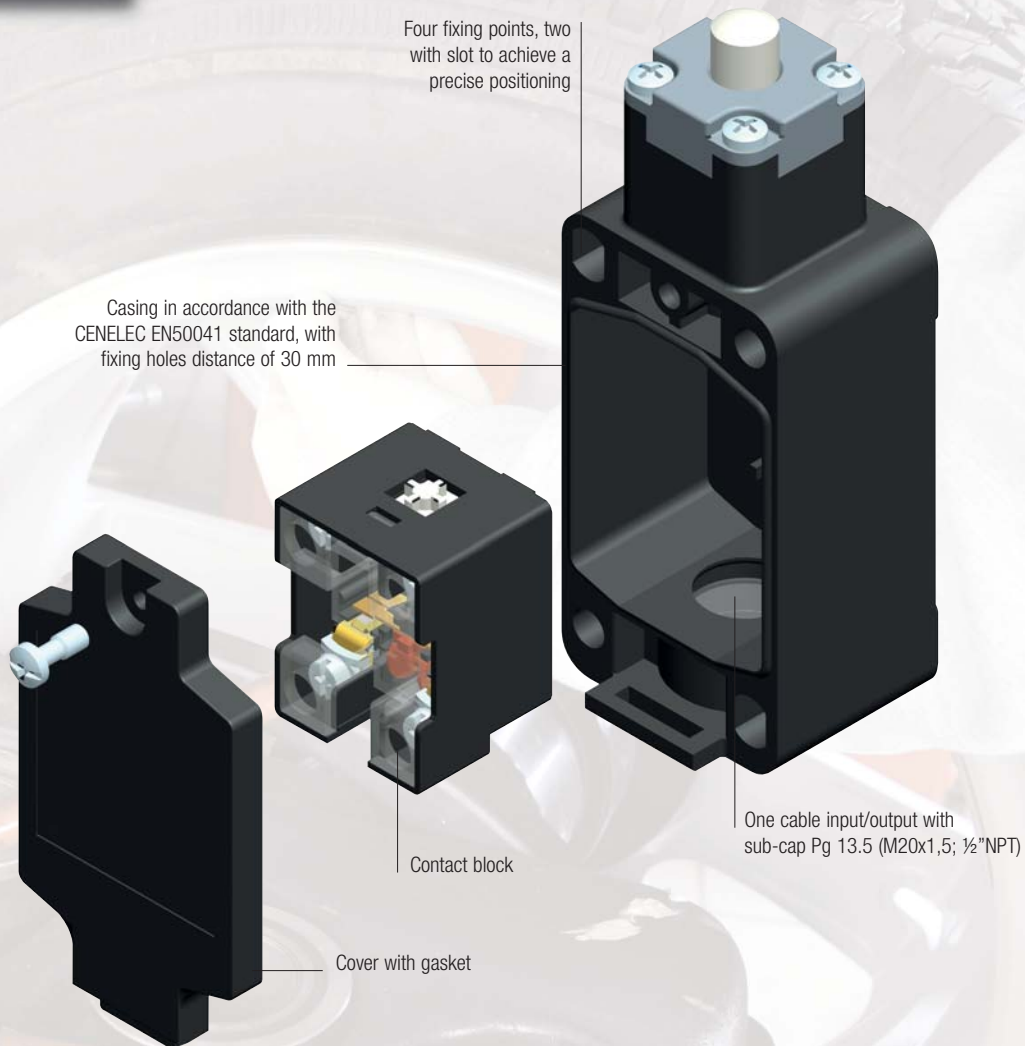
|  | Part no. | Type       | Contact block          | Circuit diagram | Contact travel | Pack. |
|--|----------|------------|------------------------|-----------------|----------------|-------|
|  | ER802350 | E300-00-FM | Snap action<br>1NO+1NC |                 |                | 1     |
|  | ER802620 | E300-01-FM | Slow action<br>1NO+1NC |                 |                | 1     |

## Flexible rod

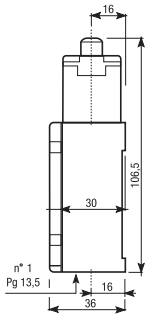
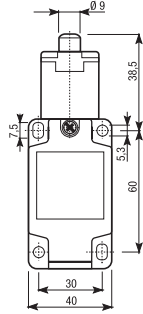
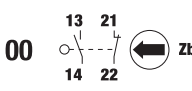
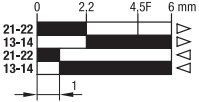
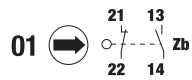
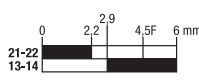
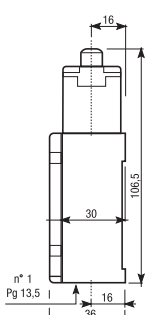
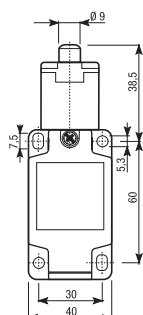
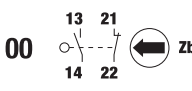
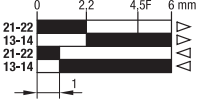
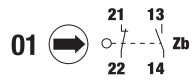
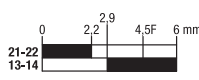
|  | Part no. | Type       | Contact block          | Circuit diagram | Contact travel | Pack. |
|--|----------|------------|------------------------|-----------------|----------------|-------|
|  | ER802310 | E300-00-LM | Snap action<br>1NO+1NC |                 |                | 1     |
|  | ER833600 | E300-01-LM | Slow action<br>1NO+1NC |                 |                | 1     |



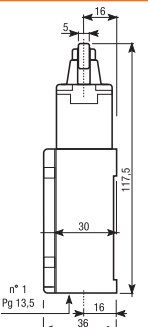
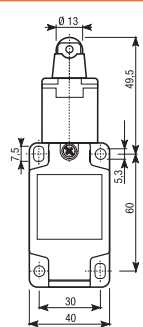
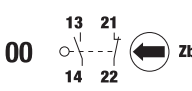
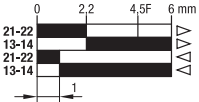
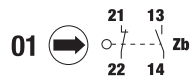
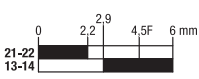
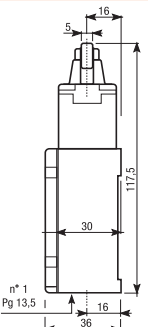
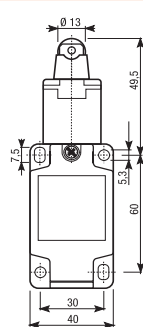
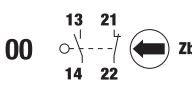
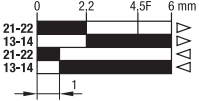
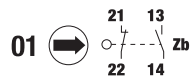
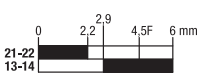
The **E400** series is the most robust of ERSCE position switches. Dimensions are in accordance with CENELEC EN 50041, two fixing holes with distance 30 mm. It is also equipped with one hole for cable input / output on the bottom of the switch. Available with thermoplastic or diecast metal alloy casing.



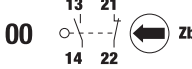
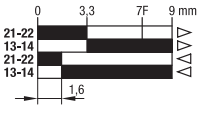
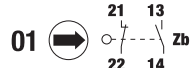
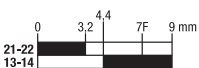
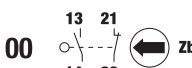
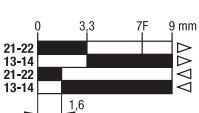
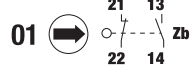
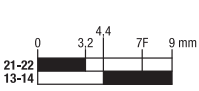
## Steel plunger

|                                                                                                                                                                                                                                                                               | Part no. | Type       | Contact block          | Circuit diagram                                                                     | Contact travel                                                                       | Pack. |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------|------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------|
| <b>Thermoplastic</b><br>   | ER817000 | E400-00-AI | Snap action<br>1NO+1NC |   |   | 1     |
|                                                                                                                                                                                                                                                                               | ER817200 | E400-01-AI | Slow action<br>1NO+1NC |   |   | 1     |
| <b>Metal</b><br>        | ER803200 | E400-00-AM | Snap action<br>1NO+1NC |   |   | 1     |
|                                                                                                                                                                                                                                                                               | ER803470 | E400-01-AM | Slow action<br>1NO+1NC |  |  | 1     |

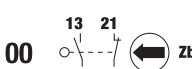
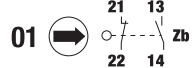
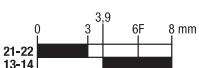
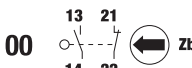
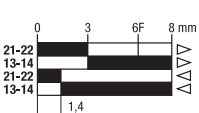
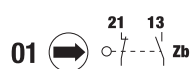
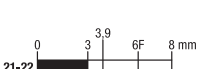
## Steel roller plunger

|                                                                                                                                                                                                                                                                                     | Part no. | Type       | Contact block          | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
| <b>Thermoplastic</b><br>   | ER817010 | E400-00-BI | Snap action<br>1NO+1NC |  |  | 1     |
|                                                                                                                                                                                                                                                                                     | ER817110 | E400-01-BI | Slow action<br>1NO+1NC |  |  | 1     |
| <b>Metal</b><br>           | ER803190 | E400-00-BM | Snap action<br>1NO+1NC |  |  | 1     |
|                                                                                                                                                                                                                                                                                     | ER803460 | E400-01-BM | Slow action<br>1NO+1NC |  |  | 1     |

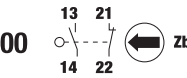
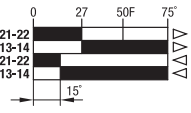
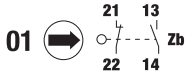
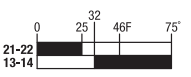
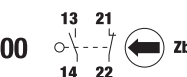
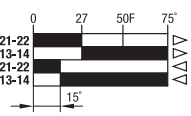
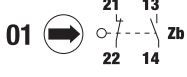
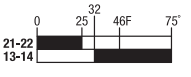
## Thermoplastic roller lever, side actuation

|                                                                                                           | Part no. | Type       | Contact block          | Circuit diagram                                                                        | Contact travel                                                                       | Pack. |
|-----------------------------------------------------------------------------------------------------------|----------|------------|------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------|
| <b>Thermoplastic</b><br> | ER817020 | E400-00-CI | Snap action<br>1NO+1NC | 00   |   | 1     |
|                                                                                                           | ER817400 | E400-01-CI | Slow action<br>1NO+1NC | 01   |   | 1     |
| <b>Metal</b><br>        | ER803180 | E400-00-CM | Snap action<br>1NO+1NC | 00   |   | 1     |
|                                                                                                           | ER803450 | E400-01-CM | Slow action<br>1NO+1NC | 01  |  | 1     |

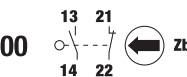
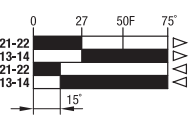
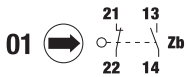
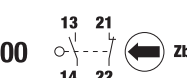
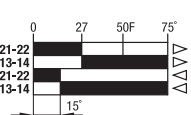
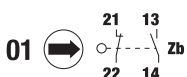
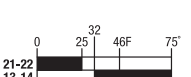
## Thermoplastic roller lever, vertical actuation

|                                                                                                             | Part no. | Type       | Contact block          | Circuit diagram                                                                         | Contact travel                                                                        | Pack. |
|-------------------------------------------------------------------------------------------------------------|----------|------------|------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
| <b>Thermoplastic</b><br> | ER817030 | E400-00-DI | Snap action<br>1NO+1NC | 00  |  | 1     |
|                                                                                                             | ER817900 | E400-01-DI | Slow action<br>1NO+1NC | 01  |  | 1     |
| <b>Metal</b><br>         | ER803170 | E400-00-DM | Snap action<br>1NO+1NC | 00  |  | 1     |
|                                                                                                             | ER803440 | E400-01-DM | Slow action<br>1NO+1NC | 01  |  | 1     |

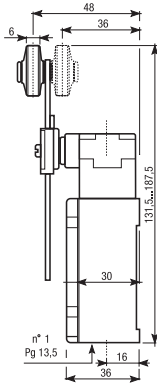
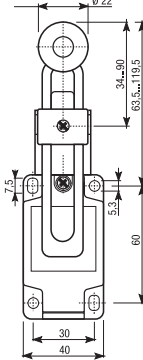
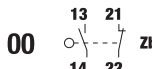
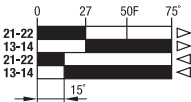
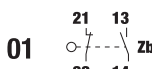
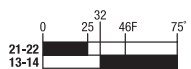
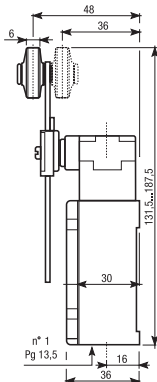
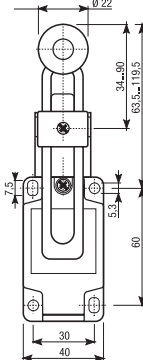
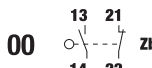
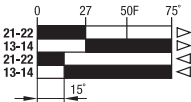
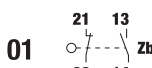
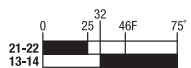
## Side rotary lever with plastic roller

|                                                                                                           | Part no. | Type       | Contact block          | Circuit diagram                                                                        | Contact travel                                                                       | Pack. |
|-----------------------------------------------------------------------------------------------------------|----------|------------|------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------|
| <b>Thermoplastic</b><br> | ER817040 | E400-00-EI | Snap action<br>1NO+1NC | 00   |   | 1     |
|                                                                                                           | ER818200 | E400-01-EI | Slow action<br>1NO+1NC | 01   |   | 1     |
| <b>Metal</b><br>        | ER803160 | E400-00-EM | Snap action<br>1NO+1NC | 00   |   | 1     |
|                                                                                                           | ER803430 | E400-01-EM | Slow action<br>1NO+1NC | 01  |  | 1     |

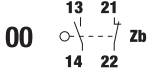
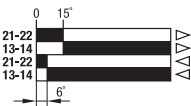
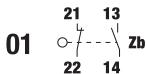
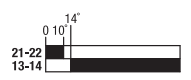
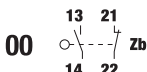
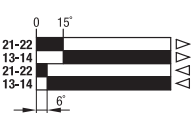
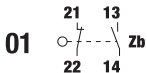
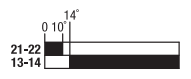
## Offset side rotary lever with plastic roller

|                                                                                                             | Part no. | Type       | Contact block          | Circuit diagram                                                                         | Contact travel                                                                        | Pack. |
|-------------------------------------------------------------------------------------------------------------|----------|------------|------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
| <b>Thermoplastic</b><br> | ER817080 | E400-00-II | Snap action<br>1NO+1NC | 00  |  | 1     |
|                                                                                                             | ER818300 | E400-01-II | Slow action<br>1NO+1NC | 01  |  | 1     |
| <b>Metal</b><br>         | ER803120 | E400-00-IM | Snap action<br>1NO+1NC | 00  |  | 1     |
|                                                                                                             | ER803390 | E400-01-IM | Slow action<br>1NO+1NC | 01  |  | 1     |

## Side rotary adjustable lever with plastic roller

|               | Part no.                                                                                                                                                                                                                                                 | Type     | Contact block | Circuit diagram        | Contact travel                                                                                                                                                             | Pack. |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Thermoplastic |       | ER817050 | E400-00-FI    | Snap action<br>1NO+1NC |       | 1     |
|               |                                                                                                                                                                                                                                                          | ER817150 | E400-01-FI    | Slow action<br>1NO+1NC |       | 1     |
| Metal         |    | ER803150 | E400-00-FM    | Snap action<br>1NO+1NC |     | 1     |
|               |                                                                                                                                                                                                                                                          | ER803420 | E400-01-FM    | Slow action<br>1NO+1NC |   | 1     |

## Flexible rod

|               | Part no. | Type       | Contact block          | Circuit diagram                                                                         | Contact travel                                                                        | Pack. |
|---------------|----------|------------|------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
| Thermoplastic | ER817090 | E400-00-LI | Snap action<br>1NO+1NC | 00    |    | 1     |
|               | ER819000 | E400-01-LI | Slow action<br>1NO+1NC | 01    |    | 1     |
| Metal         | ER803110 | E400-00-LM | Snap action<br>1NO+1NC | 00   |   | 1     |
|               | ER833800 | E400-01-LM | Slow action<br>1NO+1NC | 01  |  | 1     |



## Key actuated safety switches

- PA6 thermoplastic actuator, reinforced with fiberglass, color black (RAL 9005)
- Head can be rotated at 90° steps.
- Fixing holes distance 20-22mm
- Type Z5 key included
- Adjustable key Z5-2 available as an accessory
- IP66 protection degree



## Pull-wire safety switches

- Diecast metal alloy actuator
- Casing in PA6 thermoplastic reinforced with fiberglass, or diecast metal alloy painted (grey RAL 7022) with baked epoxy powder (earth screw for the switch)
- Manufactured according to EN ISO 13850
- Fixing holes distance 20-22mm for E100 or 30mm for E400
- IP66 protection degree



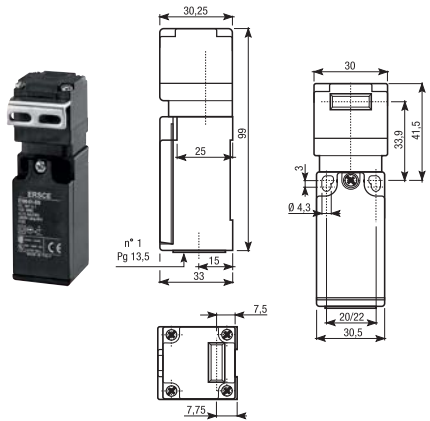
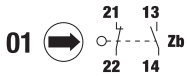
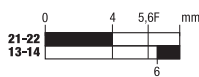
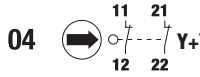
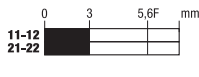
## Hinge safety switches

- Actuator with female metal shaft, lenght 24,5mm (ø 12mm)
- Fixing holes distance 20-22mm
- One cable input/output with sub-cap
- Supplied with one screw and a plug for shaft connection
- IP66 protection degree

# Key actuated series - Pull wire series

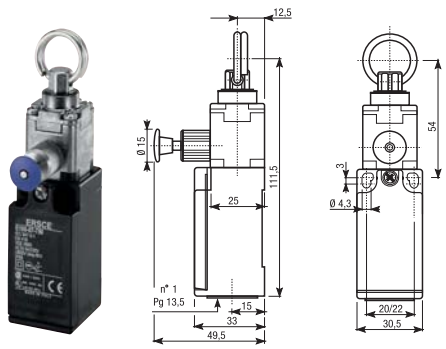
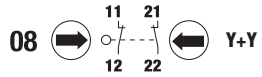
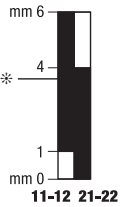
## Key actuated series

### E100 5 way with "Z5" key

|                                                                                   | Part no. | Type        | Contact block          | Circuit diagram                                                                    | Contact travel                                                                      | Pack. |
|-----------------------------------------------------------------------------------|----------|-------------|------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------|
|  | ER840010 | E100-01-S5I | Slow action<br>1NO+1NC |  |  | 1     |
|                                                                                   | ER840020 | E100-04-S5I | Slow action<br>2NC     |  |  | 1     |

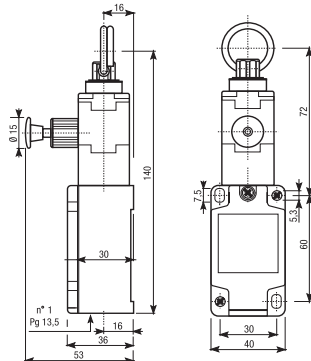
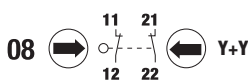
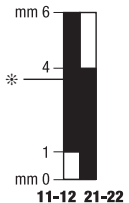
## Pull wire series

### E100 with EN418 block reset

|                                                                                     | Part no. | Type        | Contact block                                                               | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|-------------------------------------------------------------------------------------|----------|-------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
|  | ER809720 | E100-08-TBI | Slow action<br>1NO+1NC<br>*stretch the cable untill the contact (2NC) close |  |  | 1     |

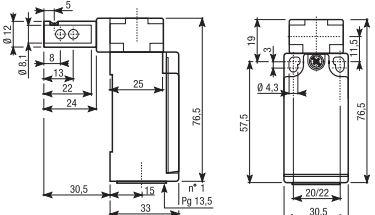
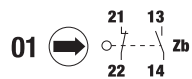
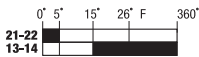
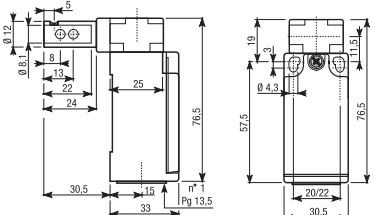
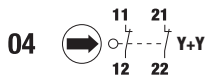
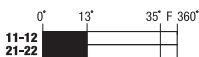
## Pull wire series

### E400 with EN418 block reset

| Part no.                                                                                                                                                            | Type     | Contact block | Circuit diagram                                                             | Contact travel                                                                                                                                                         | Pack. |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
|   | ER809780 | E400-08-TBM   | Slow action<br>1NO+1NC<br>*stretch the cable untill the contact (2NC) close |   | 1     |

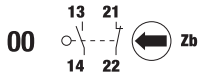
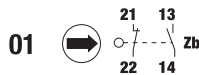
## Hinge series

### Female metal shaft

| Part no.                                                                                                                                                               | Type     | Contact block | Circuit diagram        | Contact travel                                                                                                                                                             | Pack. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
|   | ER820010 | E100-01-SCI   | Slow action<br>1NO+1NC |   | 1     |
|   | ER820020 | E100-04-SCI   | Slow action<br>1NO+1NC |   | 1     |

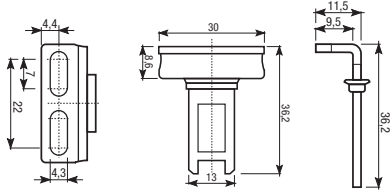
## Position switch accessories

## ■ Contact blocks

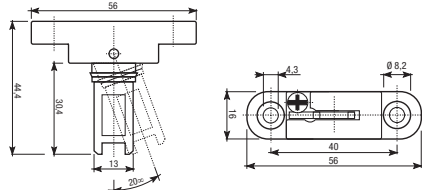
|                                                                                   | Part no. | Type | Contact block                           | Circuit diagram                                                                     | Pack |
|-----------------------------------------------------------------------------------|----------|------|-----------------------------------------|-------------------------------------------------------------------------------------|------|
|  | ER899000 | 00   | Contact block, snap action<br>1NO + 1NC |  | 20   |
|                                                                                   | ER899010 | 01   | Contact block, slow action<br>1NO + 1NC |  | 20   |

## Key actuated switch accessories

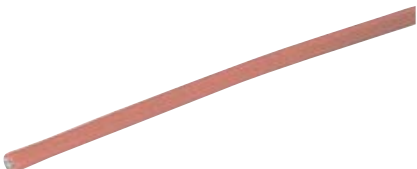
## ■ 5 way - command key mod. Z5

|                                                                                                                                                                         | Part no. | Type | Contact block | Pack. |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|---------------|-------|
|   | ER840130 | Z5   | 90° Key       | 10    |

## ■ 5 way - Adjustable command key mod. Z5-2

|                                                                                                                                                                        | Part no. | Type | Contact block  | Pack. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|----------------|-------|
|   | ER840150 | Z5-2 | Adjustable key | 10    |

## Pull wire switch accessories

|                                                                                     | Part no. | Type | Description                                           | Pack. |
|-------------------------------------------------------------------------------------|----------|------|-------------------------------------------------------|-------|
|    | ER844600 | M05  | Clamp for Ø 5mm - DIN 1480                            | 10    |
|    | ER844610 | R05  | Wire rope thimble, shape A, for rope Ø 5mm - DIN 6899 | 10    |
|  | ER844620 | T05  | Wrought iron tension screw M6 x 60                    | 10    |
|  | ER844630 | O05  | M8 eyelet with thread                                 | 10    |
|  | ER844640 | F05  | Ø 5mm red safety cable<br>Lenght = 50m                | 1     |



**ERSCE**

Pre-wired  
position  
switches

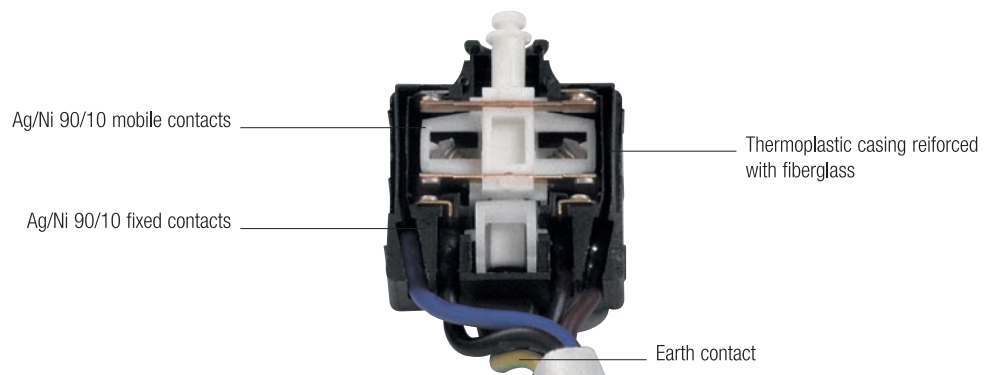
## Overview

The **E700-E600** series pre-wired position switches offer the same characteristics of reliability, accuracy and robustness of the other ERSCE switches in compact size.

Thanks to their reduced dimensions, the precision of their actuators, the practical mounting system and the high protection against the introduction of liquids and powders (IP67), these devices are suitable for use on machines where space is restricted and working environment is difficult.

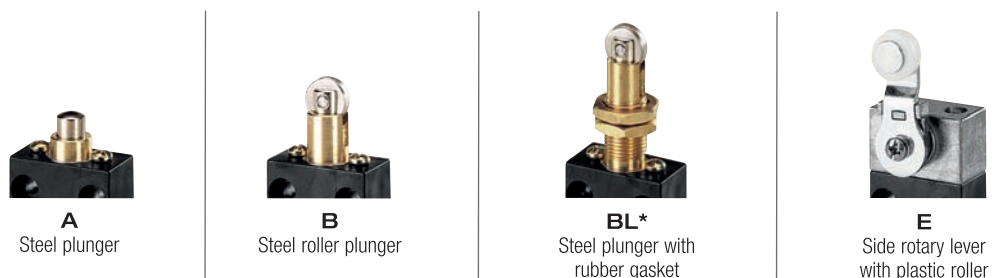
**E700** and **E600** series are equipped with 4 terminals double-break contact blocks, with galvanically separated moving contacts.

The drives are by snap action, 1NO + 1NC with positive opening of NC contact.



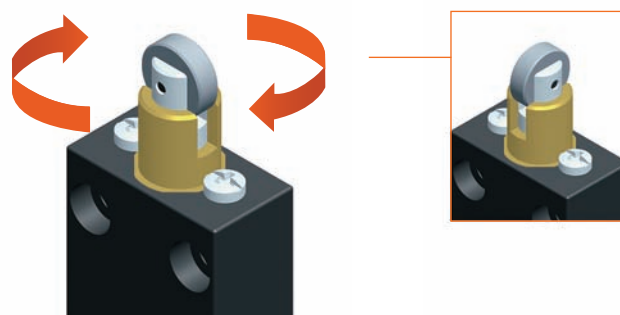
## Actuators

The actuators of prewired position switches are characterized by high precision and high mechanical life. The following executions are available:



*\*available only for E700 Series*

All actuators are made of die cast metal alloy. Other actuators are available on request.



For B-BL drives is possible to rotate the head of 90 °

# Pre-wired position switches

## Technical data

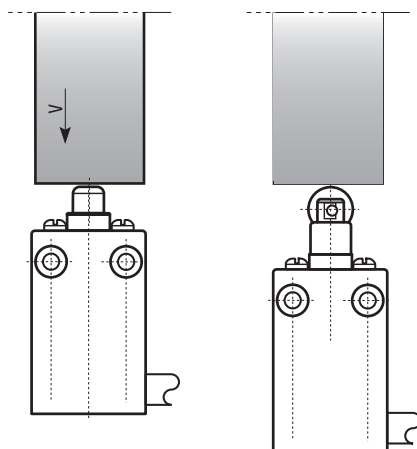
|                                          |                                                |                        |                 |                                                                        |
|------------------------------------------|------------------------------------------------|------------------------|-----------------|------------------------------------------------------------------------|
| Insulation resistance                    |                                                | 500 V DC               | mΩ              | 100                                                                    |
| Dielectric strength                      |                                                | 50/60 Hz per 1' *      | V AC            | 2500                                                                   |
| Rated insulation voltage                 | Ui                                             | IEC947-5-1             | V AC            | 500                                                                    |
| Rated thermal current                    | Ithe                                           | IEC947-5-1             | A               | 10                                                                     |
| Rated operating current                  |                                                | IEC947-5-1/EN60947-5-1 |                 |                                                                        |
| Category AC15<br>A300                    | le                                             | 24 V                   | A               | 6                                                                      |
|                                          |                                                | 125 V                  | A               | 5                                                                      |
|                                          |                                                | 230 V                  | A               | 3                                                                      |
|                                          |                                                | 400 V                  | A               | 1,8                                                                    |
| Category DC13<br>Q300                    | le                                             | 24 V                   | A               | 3                                                                      |
|                                          |                                                | 48 V                   | A               | 1,5                                                                    |
|                                          |                                                | 120 V                  | A               | 0,55                                                                   |
|                                          |                                                | 250 V                  | A               | 0,27                                                                   |
| Contact resistance (without cable)       | IEC255-7 cat.3                                 | initial value          | mΩ              | 25                                                                     |
| Short circuit protective devices         | IEC269 (IEC947-5-1)<br>gl or gG type fuse      |                        | A               | 6                                                                      |
| Rated conditionals short circuit current | IEC947-5-1                                     |                        | A               | 1000                                                                   |
| Pollution degree                         | IEC947-5-1                                     |                        |                 | 3                                                                      |
| Protection degree                        | EN 60529                                       |                        | IP              | 67                                                                     |
| Protection against electric shock        |                                                | plastic                | class           | II                                                                     |
|                                          |                                                | metal                  | class           | I                                                                      |
| Vibration resistance                     | IEC68-2-6                                      |                        | mm              | 0,35 ± 15%<br>(10 ÷ 55 Hz ± 1 Hz)                                      |
| Shock resistance                         | IEC68-2-27                                     | 11 ms                  | g               | 30                                                                     |
| Mechanical life                          |                                                |                        | cycles          | 10.000.000                                                             |
| Electrical life                          | a 250 V AC 3A with resistance<br>load cosβ=1   |                        | cycles          | 500.000                                                                |
|                                          | a 250 V AC 3A with resistance<br>load cosβ=0,4 |                        | cycles          | 500.000                                                                |
| Distance between contacts                | Snap action type                               |                        | mm              | 2x2                                                                    |
|                                          | Slow action type                               |                        | mm              | 2x1,25                                                                 |
| Cable                                    | Model/Section                                  |                        | mm <sup>2</sup> | V4 o 5F - 4 o 5x0,75 (19 AWG)                                          |
|                                          | Colors                                         |                        |                 | brown-blue(NO); black -grey(NC);<br>yellow/green(GND)<br>Grey RAL 7035 |
|                                          | Sheath color                                   |                        |                 |                                                                        |
|                                          | Length **                                      |                        | m               | 2                                                                      |
|                                          | Traslation speed                               |                        | m/mim           | 60                                                                     |
|                                          | Operating voltage                              |                        | V               | 300/500                                                                |

## Ambient conditions

|                         |             |    |                                         |
|-------------------------|-------------|----|-----------------------------------------|
| Air ambient temperature | operational | °C | -35 ÷ +85<br>(without formation of ice) |
|-------------------------|-------------|----|-----------------------------------------|

\* between terminals of the same polarity; between terminals with different polarity; between live mechanical parts and ground;  
between live mechanical parts and non-current-carrying metal parts.

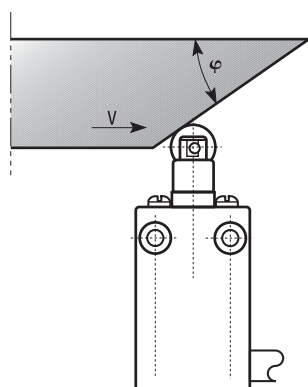
## Operating features



### Plunger, Roller plunger, vertical travel

Actuators: A-B-BL

| Drive cam operating parameters |     |
|--------------------------------|-----|
| V max (m/s)                    | 0,5 |

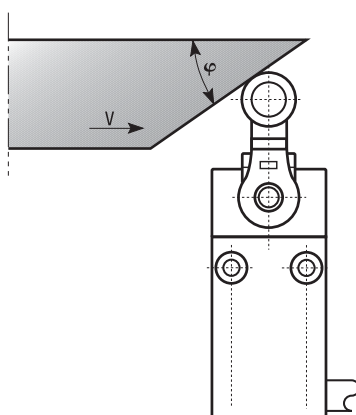


### Roller plunger, side travel

Actuators: B-BL

| Drive cam operating parameters |             |
|--------------------------------|-------------|
| $\varphi$                      | V max (m/s) |
| 30°                            | 0,1         |
| 20°                            | 0,3         |

| Drive forces                 |      |
|------------------------------|------|
| Minimum command force        | 8 N  |
| Minimum forced opening force | 18 N |



### Roller lever

Actuator: E

| Drive cam operating parameters |             |
|--------------------------------|-------------|
| $\varphi$                      | V max (m/s) |
| 30°                            | 1,5         |
| 45°                            | 1           |
| 60°                            | 0,75        |
| 60°-90°                        | 0,25        |

| Drive forces                 |       |
|------------------------------|-------|
| Minimum command force        | 4 cNm |
| Minimum forced opening force | 8 cNm |

## Position and safety switches

### ■ International standards and approvals

| Country                                        | Authority                                    | Mark of standard                                                                        | E600 | E700 |
|------------------------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------|------|------|
| <b>USA / Canada</b>                            | UL investigated according to CSA             |  1     | •    | •    |
|                                                |                                              |  1     |      |      |
| <b>Canada</b>                                  | CSA International                            |  2     |      |      |
| <b>Germany</b>                                 | Verband Deutscher Elektrotechniker           | VDE 0660 3                                                                              | +    | +    |
| <b>Switzerland</b>                             | Schweizerischer Elektrotechnischer Verein    |  +     | +    | +    |
| <b>Denmark</b>                                 | Danmarks Elektriske Materielkontrol          |  D   | +    | +    |
| <b>Norway</b>                                  | Norges Elektriske Materielkontrol            |  N   | +    | +    |
| <b>Sweden</b>                                  | Svenska Elektriske Materielkontrollanstalten |  S   | +    | +    |
| <b>Finland</b>                                 | Sähötar-kastuskeskus                         |  FI  | +    | +    |
| <b>Austria</b>                                 | Österreichischer Verband für Elektrotechnik  |  OVE | +    | +    |
| <b>Great Britain</b>                           | British Standards Institution                | BS EN 60947 3                                                                           | +    | +    |
| <b>IEC International electrical Commission</b> |                                              | IEC 60947 4                                                                             | +    | +    |
| <b>Russian Federation</b>                      | GOST                                         |  PG  | •    | •    |

- Approved
- + conforms to requirements

#### Notes:

- 1) UL Approval File E728661
- 2) CSA Approval File 026716-0-000
- 3) It is not required to bear a symbol but switches must conform to requirements.
- 4) IEC does not operate an approval scheme

## E600 Series - E700 Series



The **E600** Series is available with die cast metal alloy casing painted with baked epoxy powder (RAL 7022). The distance between the mounting holes is 25 mm.

The switches have a cable outlet on the bottom and are equipped with 5 poles cable with PVC sheath, length 2 meters.



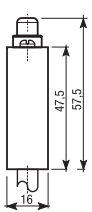
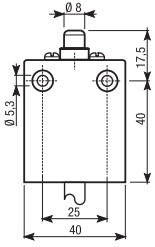
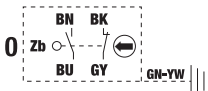
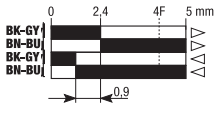
The **E700** series is available with PA6 thermoplastic casing reinforced with fiberglass (black RAL 9005) or diecast metal alloy painted with baked epoxy powder (gray RAL 7022).

The switches have a cable outlet and are provided with 5 poles cable with PVC sheath, length 2 meters.

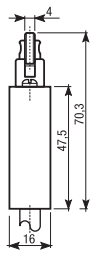
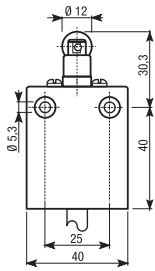
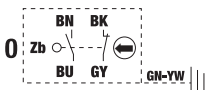
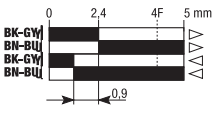
The distance between mounting holes is 20 mm.



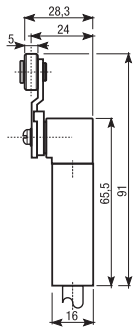
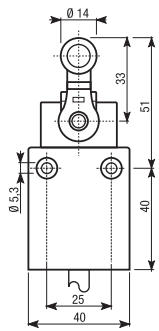
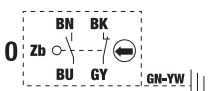
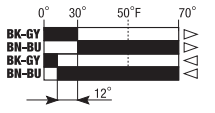
## Steel plunger

|                                                                                                                                                                                                                                                       | Part no. | Type      | Contact block          | Circuit diagram                                                                    | Contact travel                                                                      | Pack. |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------|------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------|
|    | ER813000 | E600 0 AM | Snap action<br>1NO+1NC |  |  | 1     |

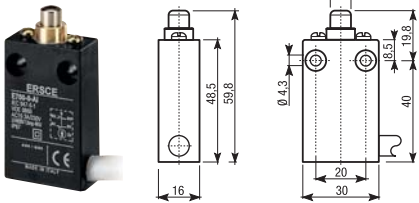
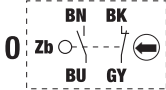
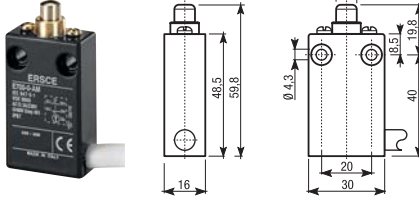
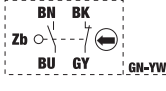
## Steel roller plunger

|                                                                                                                                                                                                                                                          | Part no. | Type      | Contact block          | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
|    | ER813020 | E600 0 BM | Snap action<br>1NO+1NC |  |  | 1     |

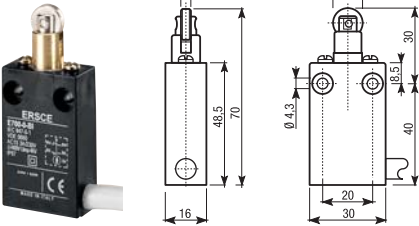
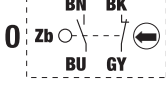
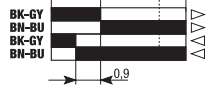
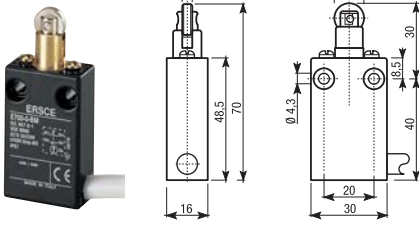
## Side rotary lever with plastic roller

|                                                                                                                                                                                                                                                             | Part no. | Type      | Contact block          | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
|    | ER813080 | E600 0 EM | Snap action<br>1NO+1NC |  |  | 1     |

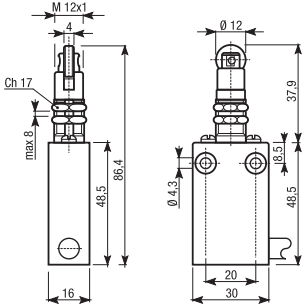
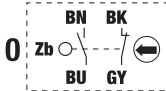
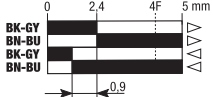
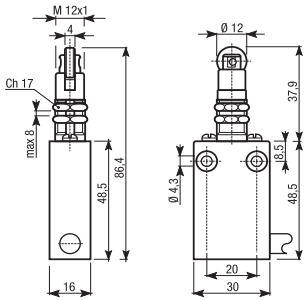
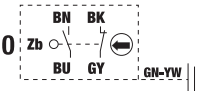
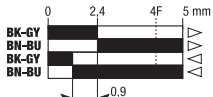
## Steel plunger

|                                                                                   | Part no. | Type      | Contact block          | Circuit diagram                                                                    | Contact travel                                                                      | Pack. |
|-----------------------------------------------------------------------------------|----------|-----------|------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------|
| Thermoplastic                                                                     |          |           |                        |                                                                                    |                                                                                     |       |
|  | ER812300 | E700 0 AI | Snap action<br>1NC+1NO |  |  | 1     |
| Metal                                                                             |          |           |                        |                                                                                    |                                                                                     |       |
|  | ER812000 | E700 0 AM | Snap action<br>1NO+1NC |  |  | 1     |

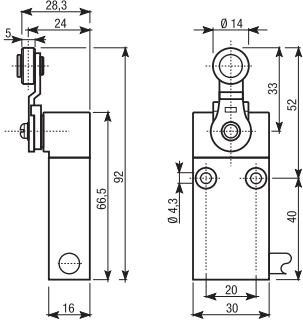
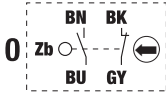
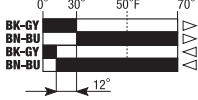
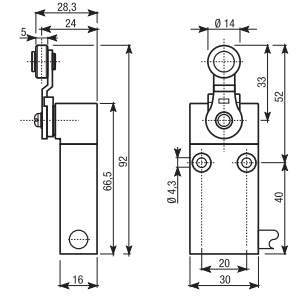
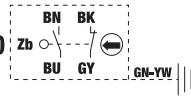
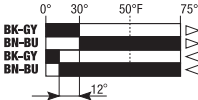
## Steel roller plunger

|                                                                                     | Part no. | Type      | Contact block          | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|-------------------------------------------------------------------------------------|----------|-----------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
| Thermoplastic                                                                       |          |           |                        |                                                                                      |                                                                                       |       |
|  | ER812320 | E700 0 BI | Snap action<br>1NO+1NC |  |  | 1     |
| Metal                                                                               |          |           |                        |                                                                                      |                                                                                       |       |
|  | ER812020 | E700 0 BM | Snap action<br>1NO+1NC |  |  | 1     |

## Steel roller plunger

|                                                                                                                                                                      | Part no. | Type       | Contact block          | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
| Thermoplastic                                                                                                                                                        |          |            |                        |                                                                                      |                                                                                       |       |
|     | ER812360 | E700 0 BLI | Snap action<br>1NO+1NC |    |    | 1     |
| Metal                                                                                                                                                                |          |            |                        |                                                                                      |                                                                                       |       |
|   | ER812060 | E700 0 BLM | Snap action<br>1NO+1NC |  |  | 1     |

## Side rotary lever with plastic roller

|                                                                                                                                                                      | Part no. | Type      | Contact block          | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
| Thermoplastic                                                                                                                                                        |          |           |                        |                                                                                      |                                                                                       |       |
|     | ER812380 | E700 0 EI | Snap action<br>1NO+1NC |    |    | 1     |
| Metal                                                                                                                                                                |          |           |                        |                                                                                      |                                                                                       |       |
|   | ER812080 | E700 0 EM | Snap action<br>1NO+1NC |  |  | 1     |

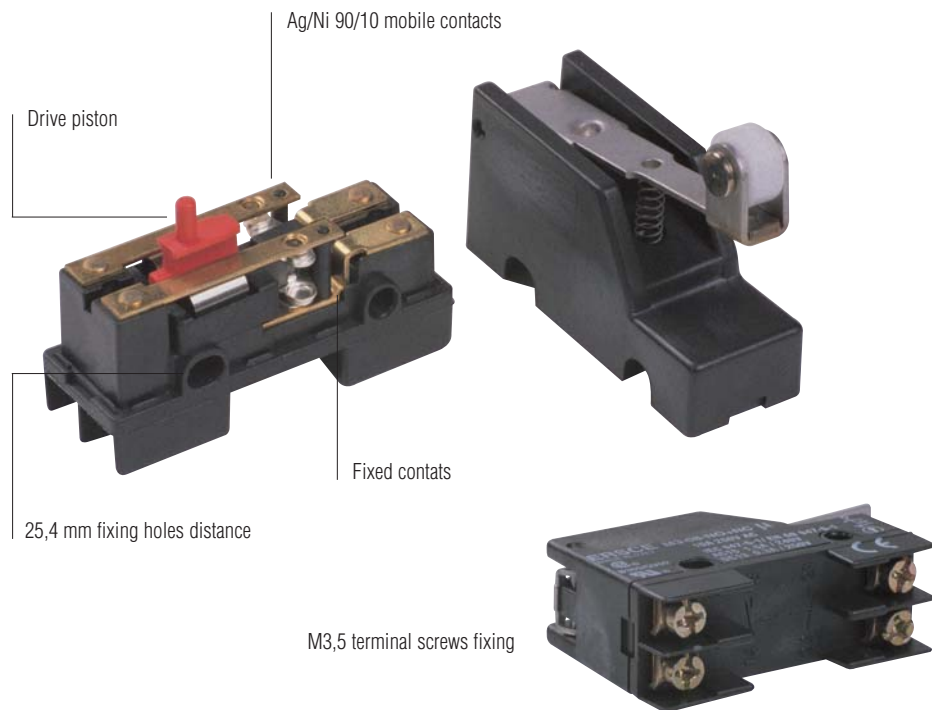


**ERSCE**

Miniaturized  
position  
switches

## Overview

The **M3** series miniaturized position switches are among the most compact on the market. Contact blocks are 1NO+1NC snap action, with positive opening of NC contact. The switches are made of PA6 double insulated thermoplastic reinforced with fibreglass, class V2. The **M3** series is equipped with M3,5 screw terminals.



Galvanically separated snap action contacts (Zb) with positive opening in accordance to VDE0113, VDE0660-200, IEC 947-5-1, EN60204 and EN292 standards.

Mechanical life of 15 million cycles.

25,4 mm fixing holes distance.

Available on request: terminal cover with PG9 cable clamp to achieve IP40 protection degree.

## Actuators



**04**  
Steel plunger Ø8,3 mm



**05**  
Steel roller plunger



**06**  
Steel roller plunger,  
turned 90°



**08**  
Lever, length 54 mm



**09**  
Lever, length  
63,5 mm



**11**  
Thermoplastic  
roller lever, length  
26,6 mm



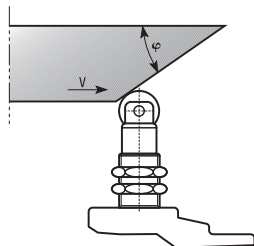
**13**  
Thermoplastic  
roller lever, length  
37 mm



**14**  
Thermoplastic  
roller lever, length  
50,5 mm

All actuators are made of metal.

## Operating characteristics

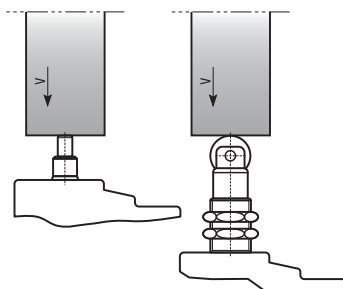


### Roller plunger, side travel

**Actuators: M...05-06**

Operating parameters of the drive cam

| $\phi$ | V max (m/s) |
|--------|-------------|
| 30°    | 0,2         |
| 20°    | 0,5         |

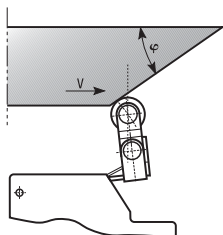


### Plunger, roller plunger, vertical travel

**Actuators: M...04-05-06**

Drive forces

|                                |      |
|--------------------------------|------|
| Minimum operating force        | 4 N  |
| Minimum positive opening force | 16 N |

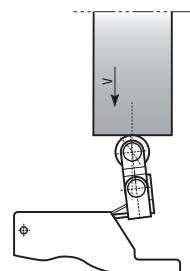


### Lever, roller lever, side travel

**Actuators: M...11-13-14**

Operating parameters of the drive cam

| $\phi$ | V max (m/s) |
|--------|-------------|
| 30°    | 0,5         |
| 45°    | 0,3         |
| 60°    | 0,2         |



### Lever, roller lever, vertical travel

Drive forces

**Actuator: M...11**

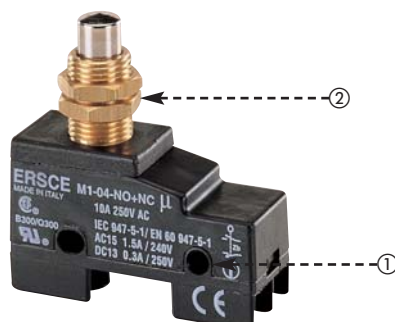
|                                |        |
|--------------------------------|--------|
| Minimum operating force        | 2 cNm  |
| Minimum positive opening force | 13 cNm |

**Actuators: M...08-13**

|                                |         |
|--------------------------------|---------|
| Minimum operating force        | 1,6 cNm |
| Minimum positive opening force | 12 cNm  |

**Actuators: M...09-14**

|                                |         |
|--------------------------------|---------|
| Minimum operating force        | 1,3 cNm |
| Minimum positive opening force | 11 cNm  |



### Tightening torque

- ① Tighten the fixing screws of the appliance with a torque of  $1,2 \div 1,5$  Nm
- ② Max tightening torque 4 N/m for actuators with hexagonal nuts

## Technical data

|                                  |                                                  |                  |                                                                          |
|----------------------------------|--------------------------------------------------|------------------|--------------------------------------------------------------------------|
| Operating speed                  |                                                  | mm/s             | 1...1000                                                                 |
| Operating frequency              |                                                  | operaz./sec (Hz) | 0,5                                                                      |
| Insulation resistance            | 500 V DC                                         | MΩ               | 100                                                                      |
| Dielectric strength              | 50/60 Hz per 1' *                                | V AC             | 2500                                                                     |
| Rated insulation voltage         | Ui IEC947-5-1                                    | V AC             | 250                                                                      |
| Rated thermal current            | Ithe IEC947-5-1                                  | A                | 10                                                                       |
| Rated operating current          | IEC947-5-1/EN60947-5-1                           |                  |                                                                          |
| Category AC15                    | le                                               | 24 V             | A 5                                                                      |
| B300                             |                                                  | 125 V            | A 3                                                                      |
|                                  |                                                  | 230 V            | A 1,5                                                                    |
| Category DC13                    | le                                               | 24 V             | A 2                                                                      |
| Q300                             |                                                  | 120 V            | A 0,6                                                                    |
|                                  |                                                  | 230 V            | A 0,2                                                                    |
| Contact resistance               | IEC255-7 cat.3                                   | initial value    | mΩ 25 max                                                                |
| Short circuit protective devices | IEC269 (IEC947-5-1)                              |                  |                                                                          |
|                                  | gl or gG type fuse                               | A                | 3                                                                        |
| Pollution degree                 | IEC947-5-1                                       |                  |                                                                          |
|                                  |                                                  |                  | 3                                                                        |
| Actuator protection degree       | EN 60529                                         |                  |                                                                          |
|                                  |                                                  | IP               | 40                                                                       |
| Vibration resistance             | IEC68-2-6                                        | mm               | 0,35 ± 15%<br>(10 ÷ 55 Hz ± 1 Hz)                                        |
| Shock resistance                 | IEC68-2-27                                       | 11 ms            | g 30                                                                     |
| Mechanical life                  |                                                  | cicli            | 15.000.000                                                               |
| Electrical life                  | a 250 V AC 1,5A with resistance<br>load cosβ=1   |                  |                                                                          |
|                                  |                                                  | cicli            | 500.000                                                                  |
|                                  | a 250 V AC 1,5A with resistance<br>load cosβ=0,4 |                  |                                                                          |
|                                  |                                                  | cicli            | 500.000                                                                  |
| Terminals                        | Type                                             |                  |                                                                          |
|                                  |                                                  |                  | Screw with combined notch<br>and retractable plate<br>(notch Ph. Size 1) |
| Protection degree                | EN60529                                          |                  |                                                                          |
|                                  |                                                  | IP               | 20                                                                       |
|                                  |                                                  | IP               | 40 with terminal covers                                                  |
| Material                         | Steel class 8,8/ Galvanized                      |                  |                                                                          |
| Max. screw tightening torque     | cNm (Kg cm) 120 (12,24)                          |                  |                                                                          |
| Max connecting capacity          | rigid cable                                      | mm²              | 2x1,5                                                                    |
|                                  | flexible cable                                   | mm²              | 2x1,5                                                                    |
| With prod terminal               |                                                  | mm²              | 1x1,5                                                                    |
| Terminal numbering               | In accordance with EN50013                       |                  |                                                                          |

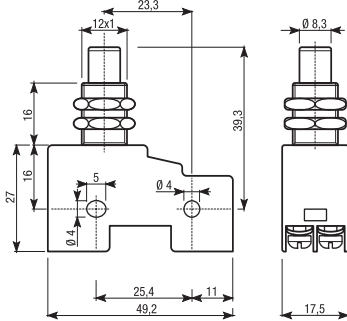
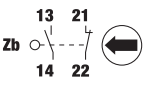
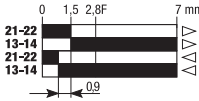
## Condition of use

|                         |             |    |                                         |
|-------------------------|-------------|----|-----------------------------------------|
| Air ambient temperature | operational | °C | -25 ÷ +85<br>(without formation of ice) |
| Relative humidity       | operational |    | 95% max                                 |

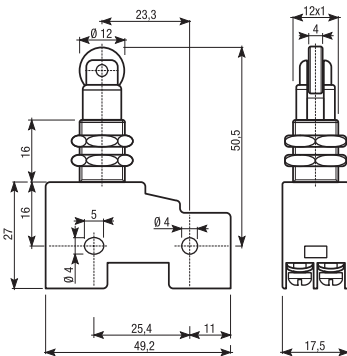
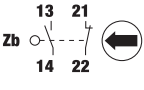
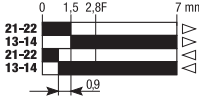
\* between terminals of the same polarity; between terminals with different polarity; between live mechanical parts and ground; between live mechanical parts and non-current-carrying metal parts



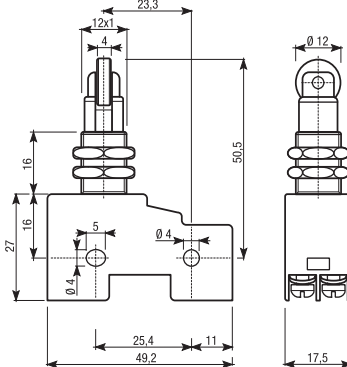
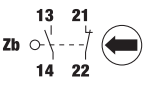
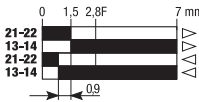
## Steel plunger ø 8,3 mm

|                                                                                                                                                                    | Part no. | Type           | Contact block          | Circuit diagram                                                                    | Contact travel                                                                      | Pack. |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------|
|   | ER200380 | M3-04<br>NO+NC | Snap action<br>1NO+1NC |  |  | 20    |

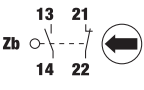
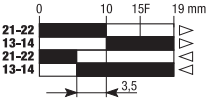
## Steel roller plunger

|                                                                                                                                                                       | Part no. | Type           | Contact block          | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
|   | ER200390 | M3-05<br>NO+NC | Snap action<br>1NO+1NC |  |  | 20    |

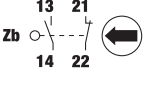
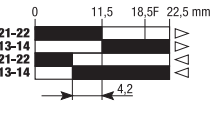
## Steel roller plunger, turned 90°

|                                                                                                                                                                        | Part no. | Type           | Contact block          | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
|   | ER200400 | M3-06<br>NO+NC | Snap action<br>1NO+1NC |  |  | 20    |

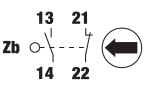
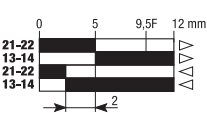
## Lever, length 54 mm

|                                                                                  | Part no. | Type           | Contact block          | Circuit diagram                                                                    | Contact travel                                                                      | Pack. |
|----------------------------------------------------------------------------------|----------|----------------|------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------|
|  | ER200420 | M3-08<br>NO+NC | Snap action<br>1NO+1NC |  |  | 10    |

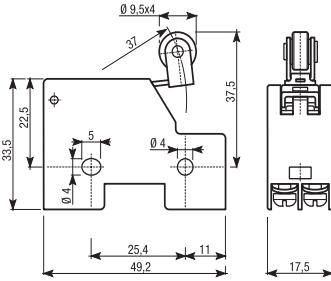
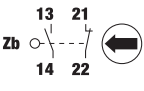
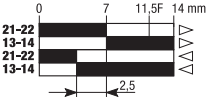
## Lever, length 63,5 mm

|                                                                                    | Part no. | Type           | Contact block          | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|------------------------------------------------------------------------------------|----------|----------------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
|  | ER200430 | M3-09<br>NO+NC | Snap action<br>1NO+1NC |  |  | 10    |

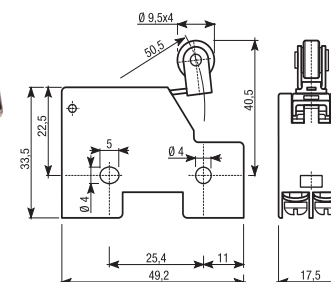
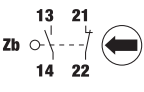
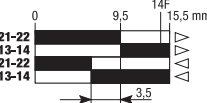
## Thermoplastic roller lever, length 26,6 mm

|                                                                                    | Part no. | Type           | Contact block          | Circuit diagram                                                                      | Contact travel                                                                        | Pack. |
|------------------------------------------------------------------------------------|----------|----------------|------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
|  | ER200450 | M3-11<br>NO+NC | Snap action<br>1NO+1NC |  |  | 20    |

## Thermoplastic roller lever, length 37 mm

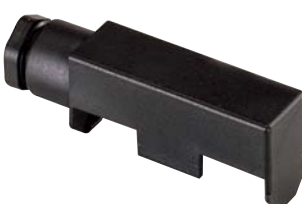
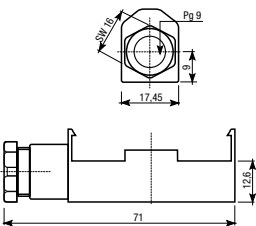
| Part no.                                                                                                                                                           | Type     | Contact block  | Circuit diagram        | Contact travel                                                                                                                                                         | Pack. |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
|   | ER200470 | M3-13<br>NO+NC | Snap action<br>1NO+1NC |   | 20    |

## Thermoplastic roller lever, length 50,5 mm

| Part no.                                                                                                                                                              | Type     | Contact block  | Circuit diagram        | Contact travel                                                                                                                                                             | Pack. |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
|   | ER200480 | M3-14<br>NO+NC | Snap action<br>1NO+1NC |   | 20    |

## Accessories

### Terminal covers for M3 Series

| Part no.                                                                                                                                                                | Type     | Contact block                                     | Pack. |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------------------------------|-------|
|   | ER200690 | M3PROTA<br>Terminal cover<br>with PG9 cable clamp | 20    |



**ERSCE**

Control and  
signalling



Control and signalling series are composed by pushbuttons and selector switches designed for quick and easy installation on panels with central fixing hole Ø22 mm. Available with thermoplastic fixing ring or with metal screws fixing, suited to ensure a more secure and stable positioning of the unit on the panel.

The range of devices, available in the most widespread colors, includes flush pushbuttons, mushrooms, handle selectors, key selectors, twin or triple touch pushbuttons (also lighted version) pilot lights and foot switches.

ERSCE Control and signalling units are designed to ensure accuracy, reliability, high mechanical and electrical life. All buttons are certified IP65 (IP66 with optional dustproof cover), while foot switches are IP54.

The contact block holders can be equipped with maximum 4 contacts with rating up to 10 A each. The NC contacts are manufactured with positive opening for safety function.

The terminal screws with self raising plate are supplied in open position for an easier and quicker wiring operation.

Control and signalling series can be equipped with a wide range of accessories.



## Control and signalling

### ■ International standards and approvals

| Country                                        | Authority                                    | Mark of standard                                                                      | Push buttons                              |             | Selectors                 | Contact blocks                        | Pilot lights         | Lamp holders   |
|------------------------------------------------|----------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------|-------------|---------------------------|---------------------------------------|----------------------|----------------|
|                                                |                                              |                                                                                       | IPF - IPR -<br>IPRL IPFB -<br>PFB- PR PRL | IP2<br>IPL2 | ISC - ISN<br>SC - SL - SN | C01B-C10B<br>R01-R10 - C02<br>C20-C11 | IS<br>S. / V<br>BA9N | BL9S-B<br>BL9R |
| <b>USA/Canada</b>                              | UL investigated according to CSA             |  1   | •<br>•<br>•                               |             | •<br>•                    | •<br>•<br>•                           | •<br>•<br>•          | •<br>•         |
| <b>Canada</b>                                  | CSA International                            |  2   |                                           |             |                           | •<br>•<br>•                           |                      |                |
| <b>Germany</b>                                 | Verband Deutscher Elektrotechniker           | VDE 0660 3                                                                            | +<br>+<br>+                               | +<br>+      | +<br>+                    | +<br>+<br>+                           | +<br>+<br>+          | +<br>+         |
| <b>Switzerland</b>                             | Schweizerischer Elektrotechnischer Verein    |  3   | +<br>+<br>+                               | +<br>+      | +<br>+                    | +<br>+<br>+                           | +<br>+<br>+          | +<br>+         |
| <b>Danmark</b>                                 | Danmarks Elektriske Materielkontrol          |  3   | +<br>+<br>+                               | +<br>+      | +<br>+                    | +<br>+<br>+                           | +<br>+<br>+          | +<br>+         |
| <b>Norway</b>                                  | Norges Elektriske Materielkontrol            |  3 | +<br>+<br>+                               | +<br>+      | +<br>+                    | +<br>+<br>+                           | +<br>+<br>+          | +<br>+         |
| <b>Sweden</b>                                  | Svenska Elektriske Materielkontrollanstalten |  3 | +<br>+<br>+                               | +<br>+      | +<br>+                    | +<br>+<br>+                           | +<br>+<br>+          | +<br>+         |
| <b>Finland</b>                                 | Sähötar-kastuskeskus                         |  3 | +<br>+<br>+                               | +<br>+      | +<br>+                    | +<br>+<br>+                           | +<br>+<br>+          | +<br>+         |
| <b>Austria</b>                                 | Österreichischer Verband für Elektrotechnik  |  3 | +<br>+<br>+                               | +<br>+      | +<br>+                    | +<br>+<br>+                           | +<br>+<br>+          | +<br>+         |
| <b>Great Britain</b>                           | British Standards Institution                | BS EN 60947 3                                                                         | +<br>+<br>+                               | +<br>+      | +<br>+                    | +<br>+<br>+                           | +<br>+<br>+          | +<br>+         |
| <b>IEC International electrical Commission</b> |                                              | IEC 60947 4                                                                           | +<br>+<br>+                               | +<br>+      | +<br>+                    | +<br>+<br>+                           | +<br>+<br>+          | +<br>+         |
| <b>Russian Federation</b>                      | GOST                                         |  4 | •<br>•<br>•                               | •<br>•      | •<br>•                    | •<br>•<br>•                           | •<br>•<br>•          | •<br>•         |

• Approved

+ Conforms to requirements

#### Notes:

1) UL Approval File 72861

2) CSA Approval File 026716-0-000

3) It is not required to bear a symbol but switches must conform to requirements.

4) IEC does not operate an approval scheme.

## Control units



Flush buttons



Mushrooms



Emergency buttons



Short handle selectors



Key selectors



Twin touch buttons

## Various function units



Reset buttons

## Control and signalling units



Illuminated  
flush buttons



Illuminated selectors



Illuminated  
twin touch buttons

## Signalling units



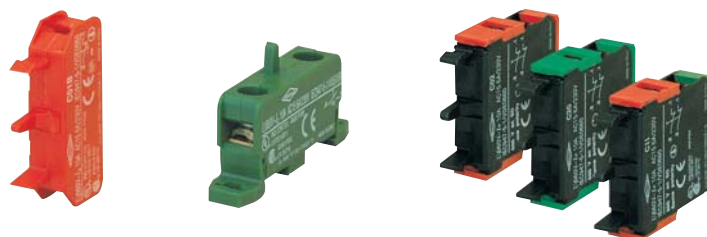
Pilot lights



Monoblock pilot lights

# Control and signalling units

## Contact blocks



Contact blocks

## Accessories



Dustproof covers

Accessories

## Control stations



Complete control stations

Double insulation enclosures

Aluminium enclosures

## Foot switches

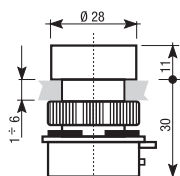


Double insulation plastic version foot switches

Metal version foot switches

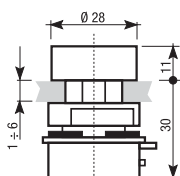
## Flush pushbuttons

### ■ Ø 22 flush pushbuttons with thermoplastic ring, IP65



| Part no. | Type | Description                                                | Color | Pack. |
|----------|------|------------------------------------------------------------|-------|-------|
| ER502010 | IPR1 | Flush pushbutton for rear mounting with thermoplastic ring | ■     | 10    |
| ER502020 | IPR2 | Flush pushbutton for rear mounting with thermoplastic ring | ■     | 10    |
| ER502030 | IPR3 | Flush pushbutton for rear mounting with thermoplastic ring | ■     | 10    |
| ER502040 | IPR4 | Flush pushbutton for rear mounting with thermoplastic ring | ■     | 10    |

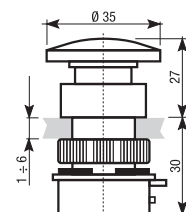
### ■ Ø 22 flush pushbuttons with metal fixing and screws, IP65



| Part no. | Type  | Description                                                     | Color | Pack. |
|----------|-------|-----------------------------------------------------------------|-------|-------|
| ER506010 | PR1/V | Flush pushbutton for rear mounting with metal fixing and screws | ■     | 10    |
| ER506020 | PR2/V | Flush pushbutton for rear mounting with metal fixing and screws | ■     | 10    |
| ER506030 | PR3/V | Flush pushbutton for rear mounting with metal fixing and screws | ■     | 10    |
| ER506040 | PR4/V | Flush pushbutton for rear mounting with metal fixing and screws | ■     | 10    |

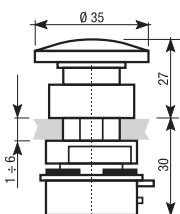
## Spring return mushroom

### ■ Ø 22 spring return mushroom with thermoplastic ring, IP65



| Part no. | Type | Description                                                      | Color | Pack. |
|----------|------|------------------------------------------------------------------|-------|-------|
| ER502150 | IPF2 | Spring return mushroom for rear mounting with thermoplastic ring | ■     | 10    |

### ■ Ø 22 spring return mushroom with metal fixing and screws, IP65

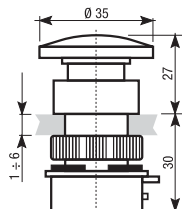


| Part no. | Type  | Description                                                           | Color | Pack. |
|----------|-------|-----------------------------------------------------------------------|-------|-------|
| ER506150 | PF2/V | Spring return mushroom for rear mounting with metal fixing and screws | ■     | 10    |

Note: when ordering please indicate both the code of the operator and of the contact, because the two products are managed separately.

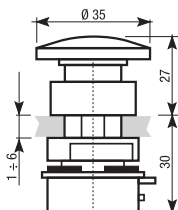
## Push-pull mushroom

### ■ Ø 22 push-pull mushroom with thermoplastic ring, IP65



| Part no. | Type    | Description                                                  | Color | Pack. |
|----------|---------|--------------------------------------------------------------|-------|-------|
| ER502350 | IPFBPT2 | Push-pull mushroom for rear mounting with thermoplastic ring | ■     | 10    |

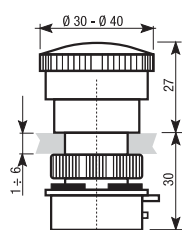
### ■ Ø 22 push-pull mushroom with metal fixing and screws, IP65



| Part no. | Type     | Description                                                       | Color | Pack. |
|----------|----------|-------------------------------------------------------------------|-------|-------|
| ER506350 | PFBPT2/V | Push-pull mushroom for rear mounting with metal fixing and screws | ■     | 10    |

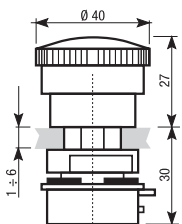
## Pull to release mushroom Ø 30 and Ø 40

### ■ Ø 22 pull to release mushroom with thermoplastic ring, IP65



| Part no. | Type     | Description                                                             | Color | Pack. |
|----------|----------|-------------------------------------------------------------------------|-------|-------|
| ER502420 | IPFB2-30 | Pull to release Ø 30 mushroom for rear mounting with thermoplastic ring | ■     | 10    |
| ER502320 | IPFB2-40 | Pull to release Ø 40 mushroom for rear mounting with thermoplastic ring | ■     | 10    |

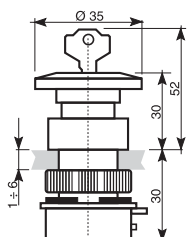
### ■ Ø 22 pull to release mushroom with metal fixing and screws, IP65



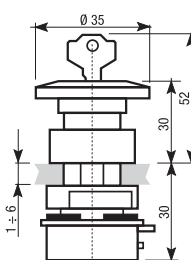
| Part no. | Type      | Description                                                                  | Color | Pack. |
|----------|-----------|------------------------------------------------------------------------------|-------|-------|
| ER506320 | PFB2-40/V | Pull to release Ø 40 mushroom for rear mounting with metal fixing and screws | ■     | 10    |

## Key to release mushroom

### ■ Ø 22 key to release mushroom with thermoplastic ring, IP65

|                                                                                                                                                                    | Part no. | Type   | Description                                                                | Color | Pack. |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------|----------------------------------------------------------------------------|-------|-------|
|   | ER502400 | IPFBC2 | Key to release mushroom, stable, for rear mounting with thermoplastic ring | ■     | 10    |
|                                                                                                                                                                    |          |        |                                                                            |       |       |

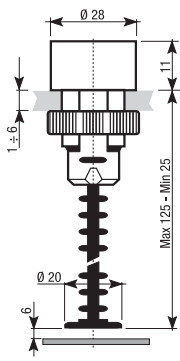
### ■ Ø 22 key to release mushroom with metal fixing and screws, IP65

|                                                                                                                                                                        | Part no. | Type    | Description                                                                     | Color | Pack. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|---------------------------------------------------------------------------------|-------|-------|
|   | ER506400 | PFBC2/V | Key to release mushroom, stable, for rear mounting with metal fixing and screws | ■     | 10    |
|                                                                                                                                                                        |          |         |                                                                                 |       |       |

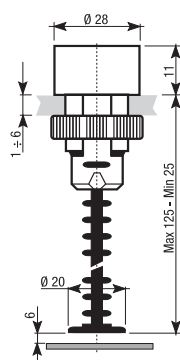
Note: when ordering please indicate both the code of the operator and of the contact, because the two products are managed separately.

## Reset pushbutton

### ■ Ø 22 reset pushbuttons with thermoplastic ring, IP65

|                                                                                                                                                                    | Part no. | Type    | Description                                                | Color | Pack. |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|------------------------------------------------------------|-------|-------|
|   | ER502910 | IPR1+AR | Reset pushbutton for rear mounting with thermoplastic ring | ■     | 10    |
|                                                                                                                                                                    |          |         |                                                            |       |       |

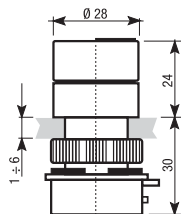
### ■ Ø 22 reset pushbuttons with metal fixing and screws, IP65

|                                                                                                                                                                        | Part no. | Type   | Description                                        | Color | Pack. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------|----------------------------------------------------|-------|-------|
|   | ER500930 | PR1+AR | Reset pushbutton for rear mounting with metal ring | ■     | 10    |
|                                                                                                                                                                        |          |        |                                                    |       |       |

Note: when ordering please indicate both the code of the operator and of the contact, because the two products are managed separately.

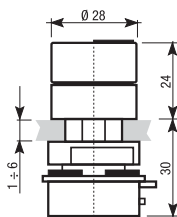
## Black short handle selector

### ■ Ø 22 short handle selector switches with thermoplastic ring, IP65



| Part no. | Type   | Description                                                                                             | Diagram | Pack. |
|----------|--------|---------------------------------------------------------------------------------------------------------|---------|-------|
| ER503010 | ISN1CD | Thermoplastic handle stable selector switch, for rear mounting with thermoplastic ring, 2 positions 45° |         | 10    |
| ER503000 | ISN1A  | Thermoplastic handle stable selector switch, for rear mounting with thermoplastic ring, 2 positions 90° |         | 10    |
| ER503020 | ISN1E  | Thermoplastic handle stable selector switch, for rear mounting with thermoplastic ring, 3 positions 45° |         | 10    |

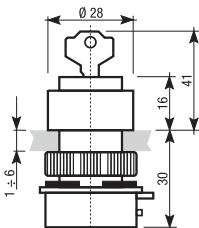
### ■ Ø 22 short handle selector switches with metal fixing and screws, IP65



| Part no. | Type    | Description                                                                                                  | Diagram | Pack. |
|----------|---------|--------------------------------------------------------------------------------------------------------------|---------|-------|
| ER507010 | SN1CD/V | Thermoplastic handle stable selector switch, for rear mounting with metal fixing and screws, 2 positions 45° |         | 10    |
| ER507000 | SN1A/V  | Thermoplastic handle stable selector switch, for rear mounting with metal fixing and screws, 2 positions 90° |         | 10    |
| ER507020 | SN1E/V  | Thermoplastic handle stable selector switch, for rear mounting with metal fixing and screws, 3 positions 45° |         | 10    |

## Key selector switches

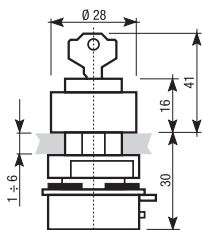
### ■ Ø 22 key selector switches with thermoplastic ring, IP65



| Part no. | Type        | Description                                                                                                                   | Diagram | Pack. |
|----------|-------------|-------------------------------------------------------------------------------------------------------------------------------|---------|-------|
| ER543010 | ISC1CD/V    | Key stable selector switch, for rear mounting with thermoplastic ring, 2 positions 45°, key removable at 0                    |         | 10    |
| ER503210 | ISC1CD/Z    | Key stable selector switch, for rear mounting with thermoplastic ring, 2 positions 45°, key removable at 0,1                  |         | 10    |
| ER503220 | ISC1E/J     | Key stable selector switch, for rear mounting with thermoplastic ring, 3 positions 45°, key removable at 1,0,2                |         | 10    |
| ER543030 | ISC1CD-RD/V | Key stable selector switch, for rear mounting with thermoplastic ring, 2 positions 45° with spring return, key removable at 0 |         | 10    |

Note: when ordering please indicate both the code of the operator and of the contact, because the two products are managed separately.

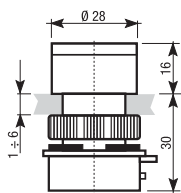
## ■ Ø 22 key selector switches with metal ring, IP65



| Part no. | Type      | Description                                                                                             | Diagram | Pack. |
|----------|-----------|---------------------------------------------------------------------------------------------------------|---------|-------|
| ER547010 | SC1CD/V-V | Key stable selector switch, for rear mounting, with metal ring, 2 positions 45°, key removable at 0     |         | 10    |
| ER507210 | SC1CD/V-Z | Key stable selector switch, for rear mounting, with metal ring, 2 positions 45°, key removable at 0,1   |         | 10    |
| ER507220 | SC1E/V-J  | Key stable selector switch, for rear mounting, with metal ring, 3 positions 45°, key removable at 0,1,2 |         | 10    |

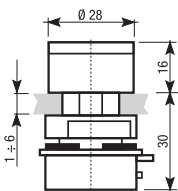
## Illuminated flush buttons

### ■ Ø 22 illuminated flush pushbuttons with thermoplastic ring, IP65



| Part no. | Type  | Description                                                            | Color | Pack. |
|----------|-------|------------------------------------------------------------------------|-------|-------|
| ER502650 | IPRL2 | Illuminated flush pushbutton for rear mounting with thermoplastic ring |       | 10    |
| ER502660 | IPRL3 | Illuminated flush pushbutton for rear mounting with thermoplastic ring |       | 10    |
| ER502690 | IPRL6 | Illuminated flush pushbutton for rear mounting with thermoplastic ring |       | 10    |

### ■ Ø 22 illuminated flush pushbuttons with metal fixing and screws, IP655

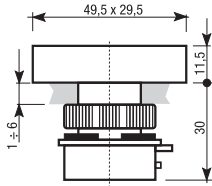


| Part no. | Type   | Description                                                                 | Color | Pack. |
|----------|--------|-----------------------------------------------------------------------------|-------|-------|
| ER506650 | PRL2/V | Illuminated flush pushbutton for rear mounting with metal fixing and screws |       | 10    |
| ER506660 | PRL3/V | Illuminated flush pushbutton for rear mounting with metal fixing and screws |       | 10    |
| ER506690 | PRL6/V | Illuminated flush pushbutton for rear mounting with metal fixing and screws |       | 10    |

Note: when ordering please indicate both the code of the operator and of the contact, because the two products are managed separately.

## Multifunction flush pushbutton

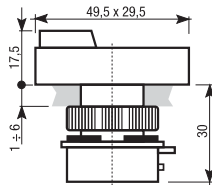
### ■ Ø 22 Multifunction twin touch flush pushbuttons with thermoplastic ring, IP40



| Part no. | Type        | Description                                                                   | Pack. |
|----------|-------------|-------------------------------------------------------------------------------|-------|
| ER502530 | IP2.2+3/SIM | Multifunction twin touch flush pushbutton for rear mounting with plastic ring | 10    |

## Multifunction twin touch flush pushbuttons without light

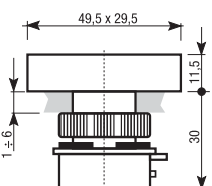
### ■ Ø 22 Multifunction twin touch flush pushbuttons with thermoplastic ring, IP40



| Part no. | Type         | Description                                                                                              | Pack. |
|----------|--------------|----------------------------------------------------------------------------------------------------------|-------|
| ER502570 | IP2.2S+3/SIM | Multifunction twin touch flush/extended pushbutton with label, for rear mounting with thermoplastic ring | 10    |

## Multifunction twin touch flush pushbuttons with light

### ■ Ø 22 Multifunction twin touch flush pushbuttons with thermoplastic ring, IP40

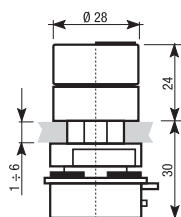


| Part no. | Type         | Description                                                                                                   | Pack. |
|----------|--------------|---------------------------------------------------------------------------------------------------------------|-------|
| ER502450 | IPL2.2+3     | Multifunction twin touch flush pushbutton with light without label, for rear mounting with thermoplastic ring | 10    |
| ER502460 | IPL2.2+3/SIM | Multifunction twin touch flush pushbutton with light with label, for rear mounting with thermoplastic ring    | 10    |

Note: when ordering please indicate both the code of the operator and of the contact, because the two products are managed separately.

## Illuminated selector switches

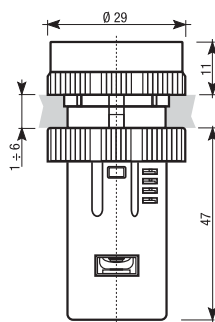
### ■ Ø 22 illuminated selector switches



| Part no. | Type    | Description                                                                                | Diagram | Color | Pack. |
|----------|---------|--------------------------------------------------------------------------------------------|---------|-------|-------|
| ER507400 | SL2CD/V | Thermoplastic handle stable selector switch, with metal fixing and screws, 2 positions 45° |         | ■     | 10    |
| ER507410 | SL3CD/V | Thermoplastic handle stable selector switch, with metal fixing and screws, 2 positions 45° |         | ■     | 10    |
| ER507500 | SL2E/V  | Thermoplastic handle stable selector switch, with metal fixing and screws, 3 positions 45° |         | ■     | 10    |
| ER507510 | SL3E/V  | Thermoplastic handle stable selector switch, with metal fixing and screws, 3 positions 45° |         | ■     | 10    |

### Ø 22 pilot lights for direct connection

### ■ Ø 22 pilot lights for direct connection for rear mounting with thermoplastic ring

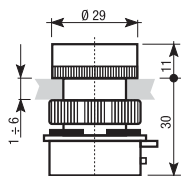


| Part no. | Type   | Description                                                                       | Color | Pack. |
|----------|--------|-----------------------------------------------------------------------------------|-------|-------|
| ER501800 | BA9N.2 | Pilot lights for direct connection lamp for rear mounting with thermoplastic ring | ■     | 10    |
| ER501810 | BA9N.3 | Pilot lights for direct connection lamp for rear mounting with thermoplastic ring | ■     | 10    |
| ER501820 | BA9N.4 | Pilot lights for direct connection lamp for rear mounting with thermoplastic ring | ■     | 10    |

Note: when ordering please indicate both the code of the operator and of the contact, because the two products are managed separately.

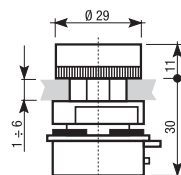
## Pilot light

### ■ Ø 22 pilot light with thermoplastic ring



| Part no. | Type | Description                                            | Color | Pack. |
|----------|------|--------------------------------------------------------|-------|-------|
| ER503600 | IS2  | Pilot light for rear mounting, with thermoplastic ring | ■     | 10    |
| ER503610 | IS3  | Pilot light for rear mounting, with thermoplastic ring | ■     | 10    |
| ER503620 | IS4  | Pilot light for rear mounting, with thermoplastic ring | ■     | 10    |
| ER503640 | IS6  | Pilot light for rear mounting, with thermoplastic ring | □     | 10    |

### ■ Ø 22 pilot light with metal fixing and screws

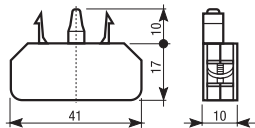
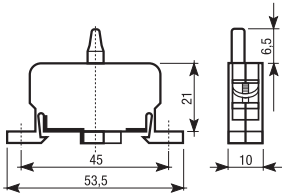


| Part no. | Type | Description                                                | Color | Pack. |
|----------|------|------------------------------------------------------------|-------|-------|
| ER507600 | S2/V | Pilot light for rear mounting with metal fixing and screws | ■     | 10    |
| ER507610 | S3/V | Pilot light for rear mounting with metal fixing and screws | ■     | 10    |
| ER507620 | S4/V | Pilot light for rear mounting with metal fixing and screws | ■     | 10    |
| ER507640 | S6/V | Pilot light for rear mounting with metal fixing and screws | □     | 10    |

Note: when ordering please indicate both the code of the operator and of the contact, because the two products are managed separately.

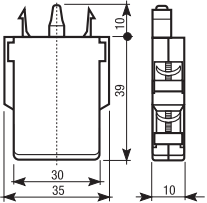
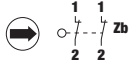
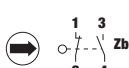
## Contact blocks - single contact

### ■ Slow action

|                                                                                                                                                                                             | Part no. | Type | Description                         | Diagram                                                                             | Pack. |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|-------------------------------------|-------------------------------------------------------------------------------------|-------|
| <b>Rear mounting</b><br>  | ER520810 | C01B | Slow action single contact block NC |  | 60    |
|                                                                                                                                                                                             | ER520800 | C10B | Slow action single contact block NA |  | 60    |
| <b>Base mounting</b><br>   | ER100080 | R01  | Slow action single contact block NC |  | 40    |
|                                                                                                                                                                                             | ER100070 | R10  | Slow action single contact block NA |  | 40    |

## Contact blocks - double contacts

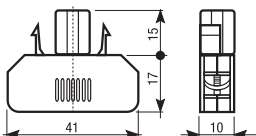
### ■ Slow action

|                                                                                                                                                                                                | Part no. | Type | Description                               | Diagram                                                                               | Pack. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|-------------------------------------------|---------------------------------------------------------------------------------------|-------|
| <b>Rear mounting</b><br>  | ER520840 | C02  | Slow action twin contact block NC         |  | 20    |
|                                                                                                                                                                                                | ER520830 | C20  | Slow action twin contact block NO         |  | 20    |
|                                                                                                                                                                                                | ER520820 | C11  | Slow action twin contact block<br>1NC+1NO |  | 20    |

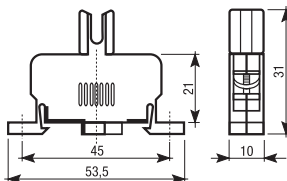
Note: when ordering please indicate both the code of the operator and of the contact, because the two products are managed separately.

## Lamp holder

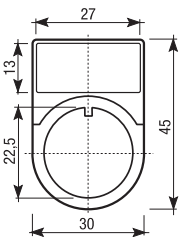
### ■ Lamp holder direct power supply, rear mounting

|                                                                                                                                                                    | Part no. | Type   | Description                                    | Diagram                                                                             | Pack. |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------|------------------------------------------------|-------------------------------------------------------------------------------------|-------|
|   | ER520050 | BL9S-B | Lamp holder direct power supply, rear mounting |  | 10    |
|                                                                                                                                                                    |          |        |                                                |                                                                                     |       |

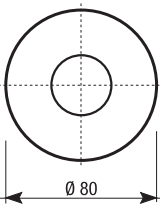
### ■ Lamp holder direct power supply, base mounting

|                                                                                                                                                                      | Part no. | Type | Description                                    | Diagram                                                                              | Pack. |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------------------------------------------|--------------------------------------------------------------------------------------|-------|
|   | ER100090 | BL9R | Lamp holder direct power supply, base mounting |  | 10    |
|                                                                                                                                                                      |          |      |                                                |                                                                                      |       |

### ■ Legend plate

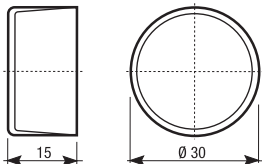
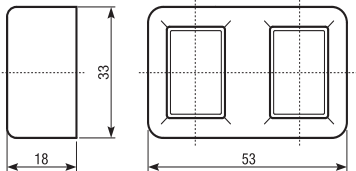
|                                                                                                                                                                         | Part no. | Type | Description                      | Pack. |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|----------------------------------|-------|
|   | ER522120 | PTR  | Legend plate for adhesive labels | 10    |
|                                                                                                                                                                         |          |      |                                  |       |

### ■ Adhesive disc

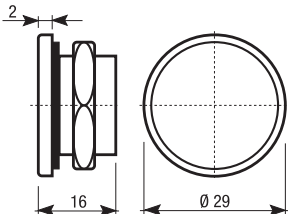
|                                                                                                                                                                         | Part no. | Type  | Description                  | Pack. |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------|------------------------------|-------|
|   | ER522050 | DG22  | Neutral adhesive disc        | 10    |
|                                                                                                                                                                         | ER522220 | DGS22 | Emergency-stop adhesive disc | 10    |

Note: when ordering please indicate both the code of the operator and of the contact, because the two products are managed separately.

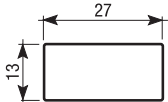
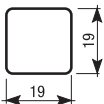
## Dustproof covers

|                                                                                                                                                                     | Part no. | Type  | Description                                  | Pack. |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------|----------------------------------------------|-------|
|   | ER522020 | P22   | Flush pushbutton dustproof cover             | 10    |
|                                                                                                                                                                     |          |       |                                              |       |
|   | ER522000 | P22-2 | Twin touch flush pushbuttons dustproof cover | 10    |
|                                                                                                                                                                     |          |       |                                              |       |

## Closure cap

|                                                                                                                                                                        | Part no. | Type | Description                  | Pack. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|------------------------------|-------|
|   | ER522090 | T22  | Closure cap for holes Ø22 mm | 10    |
|                                                                                                                                                                        |          |      |                              |       |

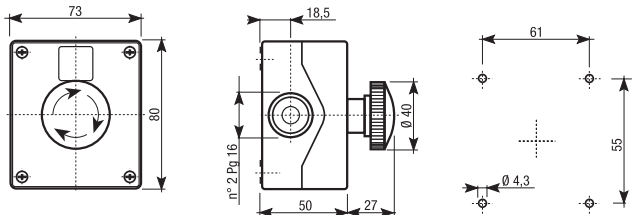
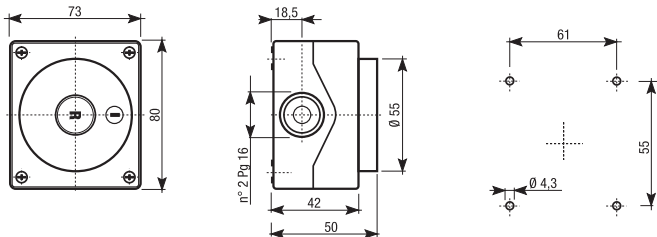
## Label

|                                                                                                                                                                         | Part no. | Type | Description               | Pack. |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|---------------------------|-------|
|   | ER522200 | EN   | EN adhesive neutral label | 10    |
|                                                                                                                                                                         |          |      |                           |       |
|   | ER100500 | ES   | ES adhesive neutral label | 10    |
|                                                                                                                                                                         |          |      |                           |       |

Note: when ordering please indicate both the code of the operator and of the contact, because the two products are managed separately.

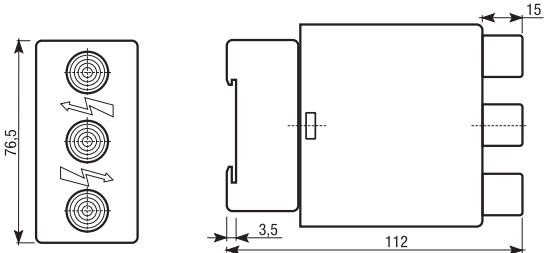
## Control stations

### Double insulation station with control units

|                                                                                                                                                                        | Part no. | Type   | Description                                                                                                             | Pack. |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------|-------------------------------------------------------------------------------------------------------------------------|-------|
|       | ER103550 | SC1-50 | Enclosure IP65 with yellow cover, "stop" label, and rotate to release red mushroom, 1 NC contact block                  | 1     |
|   | ER103010 | SC1-90 | Enclosure IP50 for elevator shaft (EN81) with red emergency button, indication of 1 or 0 position and blue reset button | 1     |

## Flashing device

### Flashing device

|                                                                                                                                                                         | Part no. | Type | Description                 | Pack. |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|-----------------------------|-------|
|   | ERC00420 | D 91 | Flashing device 190-500V AC | 1     |

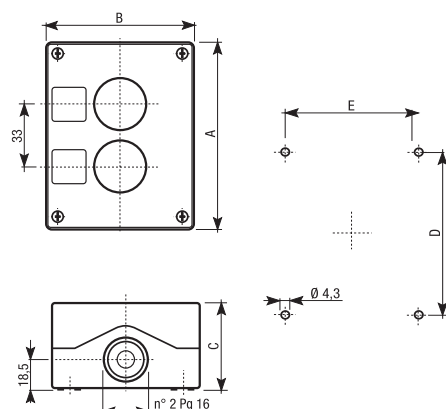
Note: when ordering please indicate both the code of the operator and of the contact, because the two products are managed separately.

## Empty enclosures

### Double insulation enclosures



| Part no. | Type | Description                                                     | Pack. |
|----------|------|-----------------------------------------------------------------|-------|
| ER100010 | SD1  | Thermoplastic enclosure for base mounting, 1 hole, grey cover   | 1     |
| ER100060 | SD1G | Thermoplastic enclosure for base mounting, 1 hole, yellow cover | 1     |
| ER100020 | SD2  | Thermoplastic enclosure for base mounting, 2 holes, grey cover  | 1     |
| ER100030 | SD3  | Thermoplastic enclosure for base mounting, 3 holes, grey cover  | 1     |
| ER100040 | SD4  | Thermoplastic enclosure for base mounting, 4 holes, grey cover  | 1     |
| ER102240 | SD1M | Thermoplastic enclosure for rear mounting, 1 hole, grey cover   | 1     |
| ER102250 | SD2M | Thermoplastic enclosure for rear mounting, 2 holes, grey cover  | 1     |
| ER102260 | SD3M | Thermoplastic enclosure for rear mounting, 3 holes, grey cover  | 1     |
| ER102270 | SD4M | Thermoplastic enclosure for rear mounting, 4 holes, grey cover  | 1     |



#### 50 mm version for electrical units base mounting

(included contact blocks and lamp holders fixing plate)

| Part no. | Type | Cover color |
|----------|------|-------------|
| ER100010 | SD1  | Grey        |
| ER100060 | SD1G | Yellow      |
| ER100020 | SD2  | Grey        |
| ER100030 | SD3  | Grey        |
| ER100040 | SD4  | Grey        |

Color grey RAL 7035 - Color yellow RAL 1012

| Dimensions (mm) |    |    | Template |    | No. holes<br>Ø 22 |
|-----------------|----|----|----------|----|-------------------|
| A               | B  | C  | D        | E  |                   |
| 73              | 80 | 50 | 61       | 55 | 1                 |
| 73              | 80 | 50 | 61       | 55 | 1                 |
| 106             | 80 | 50 | 94       | 55 | 2                 |
| 139             | 80 | 50 | 127      | 55 | 3                 |
| 172             | 80 | 50 | 160      | 55 | 4                 |

#### 80 mm version for rear mounting electrical units

(contact blocks and lamp holders fixing directly on operator)

| Part no. | Type  | Cover color |
|----------|-------|-------------|
| ER102240 | SD1M  | Grey        |
| ER102230 | SD1MG | Yellow      |
| ER102250 | SD2M  | Grey        |
| ER102260 | SD3M  | Grey        |
| ER102270 | SD4M  | Grey        |

Color grey RAL 7044 - Color yellow RAL 1012

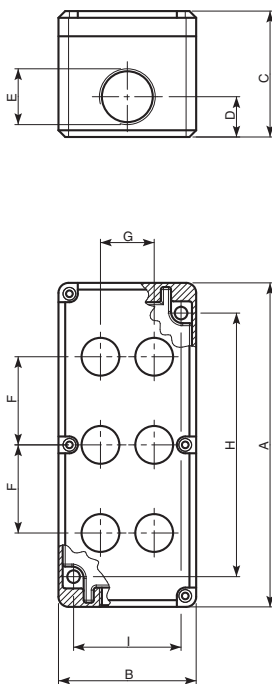
| Dimensions (mm) |    |    | Template |    | No. holes<br>Ø 22 |
|-----------------|----|----|----------|----|-------------------|
| A               | B  | C  | D        | E  |                   |
| 73              | 80 | 80 | 61       | 55 | 1                 |
| 73              | 80 | 80 | 61       | 55 | 1                 |
| 106             | 80 | 80 | 94       | 55 | 2                 |
| 139             | 80 | 80 | 127      | 55 | 3                 |
| 172             | 80 | 80 | 160      | 55 | 4                 |

Note: when ordering please indicate both the code of the operator and of the contact, because the two products are managed separately.

## Aluminium enclosures



| Part no. | Type     | Description                                     | Pack. |
|----------|----------|-------------------------------------------------|-------|
| ER104000 | SM 1 V   | Aluminium enclosure, 1 vertical hole, L82       | 1     |
| ER104010 | SM 2 V   | Aluminium enclosure, 2 vertical holes, L141     | 1     |
| ER104020 | SM 3 V   | Aluminium enclosure, 3 vertical holes, L193     | 1     |
| ER104030 | SM 4 O   | Aluminium enclosure, 4 horizontal holes, L141   | 1     |
| ER104040 | SM 6 O   | Aluminium enclosure, 6 horizontal holes, L193   | 1     |
| ER104050 | SM 8 O   | Aluminium enclosure, 8 horizontal holes, L143,5 | 1     |
| ER105000 | SV 1 SF  | Aluminium enclosure without holes L82           | 1     |
| ER105010 | SV 2 SF  | Aluminium enclosure without holes L141          | 1     |
| ER105020 | SV 3 SF  | Aluminium enclosure without holes L193          | 1     |
| ER105030 | SO 4 SF  | Aluminium enclosure without holes L143,5        | 1     |
| ER105040 | SV 4 SF  | Aluminium enclosure without holes L246          | 1     |
| ER105050 | SO 6 SF  | Aluminium enclosure without holes L195, A160    | 1     |
| ER105060 | SV 6 SF  | Aluminium enclosure without holes L352          | 1     |
| ER105080 | SO 12 SF | Aluminium enclosure without holes L247          | 1     |



### Versions with holes Ø 22 mm

| Part no. | Type   | Color | No. holes |
|----------|--------|-------|-----------|
| ER104000 | SM 1 V | ■     | 1         |
| ER104010 | SM 2 V | ■     | 2         |
| ER104020 | SM 3 V | ■     | 3         |
| ER104030 | SM 4 O | ■     | 4         |
| ER104040 | SM 6 O | ■     | 6         |
| ER104050 | SM 8 O | ■     | 8         |

Color grey RAL 7031

| Dimensions (mm) |       |    |    |        |      |    | Template |     | N. Holes |   |
|-----------------|-------|----|----|--------|------|----|----------|-----|----------|---|
| A               | B     | C  | D  | E      | F    | G  | H        | I   | O        | V |
| 82              | 82    | 75 | 24 | 1" GAS | -    | -  | 49       | 67  | -        | 1 |
| 141             | 82    | 75 | 24 | 1" GAS | 52,5 | -  | 108      | 67  | -        | 2 |
| 193             | 82    | 75 | 24 | 1" GAS | 52,5 | -  | 157      | 64  | -        | 3 |
| 141             | 82    | 75 | 24 | 1" GAS | 52,5 | 32 | 108      | 67  | 2        | 2 |
| 193             | 82    | 75 | 24 | 1" GAS | 52,5 | 32 | 157      | 64  | 2        | 3 |
| 143,5           | 143,5 | 80 | 29 | 1" GAS | 52,5 | 32 | 125      | 109 | 4        | 2 |

O = Number of horizontal holes

V = Number of vertical holes

### Versions without holes

| Part no. | Type     | Color |
|----------|----------|-------|
| ER105000 | SV 1 SF  | ■     |
| ER105010 | SV 2 SF  | ■     |
| ER105020 | SV 3 SF  | ■     |
| ER105030 | SO 4 SF  | ■     |
| ER105040 | SV 4 SF  | ■     |
| ER105050 | SO 6 SF  | ■     |
| ER105060 | SV 6 SF  | ■     |
| ER105080 | SO 12 SF | ■     |

Color grey RAL 7031

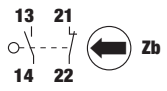
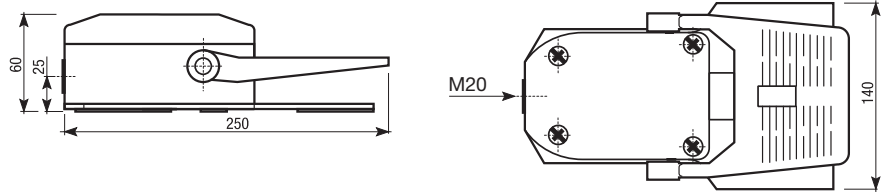
| Dimensions (mm) |       |    |    |            |     | Template |  |
|-----------------|-------|----|----|------------|-----|----------|--|
| A               | B     | C  | D  | E          | H   | I        |  |
| 82              | 82    | 75 | 24 | 1" GAS     | 49  | 67       |  |
| 141             | 82    | 75 | 24 | 1" GAS     | 108 | 67       |  |
| 193             | 82    | 75 | 24 | 1" GAS     | 157 | 64       |  |
| 143,5           | 143,5 | 80 | 29 | 1" GAS     | 125 | 109      |  |
| 246             | 82    | 75 | 24 | 1" GAS     | 210 | 63,5     |  |
| 195             | 160   | 80 | 29 | 1" GAS     | 162 | 140      |  |
| 352             | 82    | 75 | 24 | 1" GAS     | 313 | 65       |  |
| 247             | 220   | 80 | 30 | 1" 1/4 GAS | 212 | 204      |  |

Note: when ordering please indicate both the code of the operator and of the contact, because the two products are managed separately.

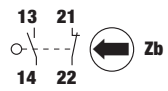
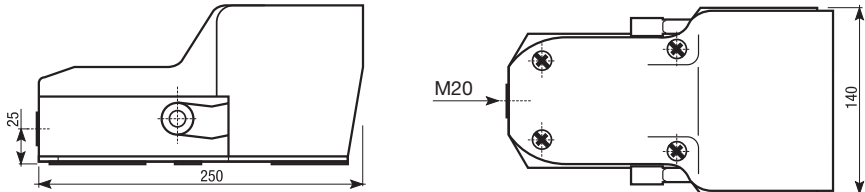
## Double insulation thermoplastic foot switches

(IP54)

## ■ without protection

|                                                                                  | Part no.                                                                           | Type       | Description                                               | Diagram                                                                             | Pack. |
|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------|-----------------------------------------------------------|-------------------------------------------------------------------------------------|-------|
|  | PSI00M20                                                                           | PSI 00 M20 | Thermoplastic foot switch without protection without lock |  | 1     |
|                                                                                  |  |            |                                                           |                                                                                     |       |

## ■ with protection

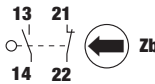
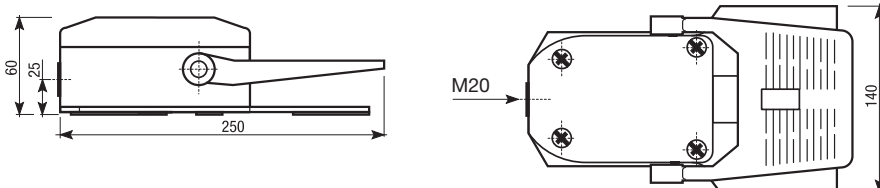
|                                                                                      | Part no.   | Type          | Description                                            | Diagram                                                                               | Pack. |
|--------------------------------------------------------------------------------------|------------|---------------|--------------------------------------------------------|---------------------------------------------------------------------------------------|-------|
|    | PCI00M20   | PCI 00 M20    | Thermoplastic foot switch with protection without lock |  | 1     |
|                                                                                      | PCI00PIM20 | PCI 00 PI M20 | Thermoplastic foot switch with protection with lock    |                                                                                       | 1     |
|  |            |               |                                                        |                                                                                       |       |

Note: when ordering please indicate both the code of the operator and of the contact, because the two products are managed separately.

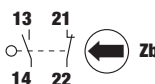
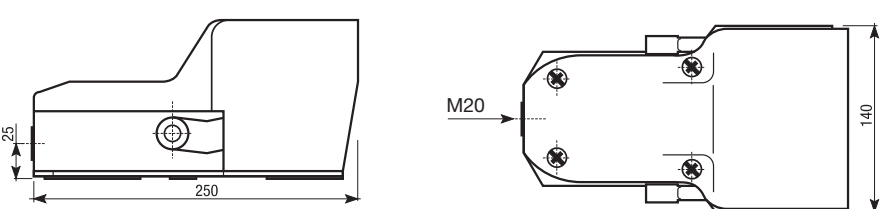
## Metal foot switches

(IP54)

### ■ without protection

|                                                                                    | Part no. | Type       | Description                                       | Diagram                                                                             | Pack. |
|------------------------------------------------------------------------------------|----------|------------|---------------------------------------------------|-------------------------------------------------------------------------------------|-------|
|    | PSA00M20 | PSA 00 M20 | Metal foot switch without protection without lock |  | 1     |
|  |          |            |                                                   |                                                                                     |       |

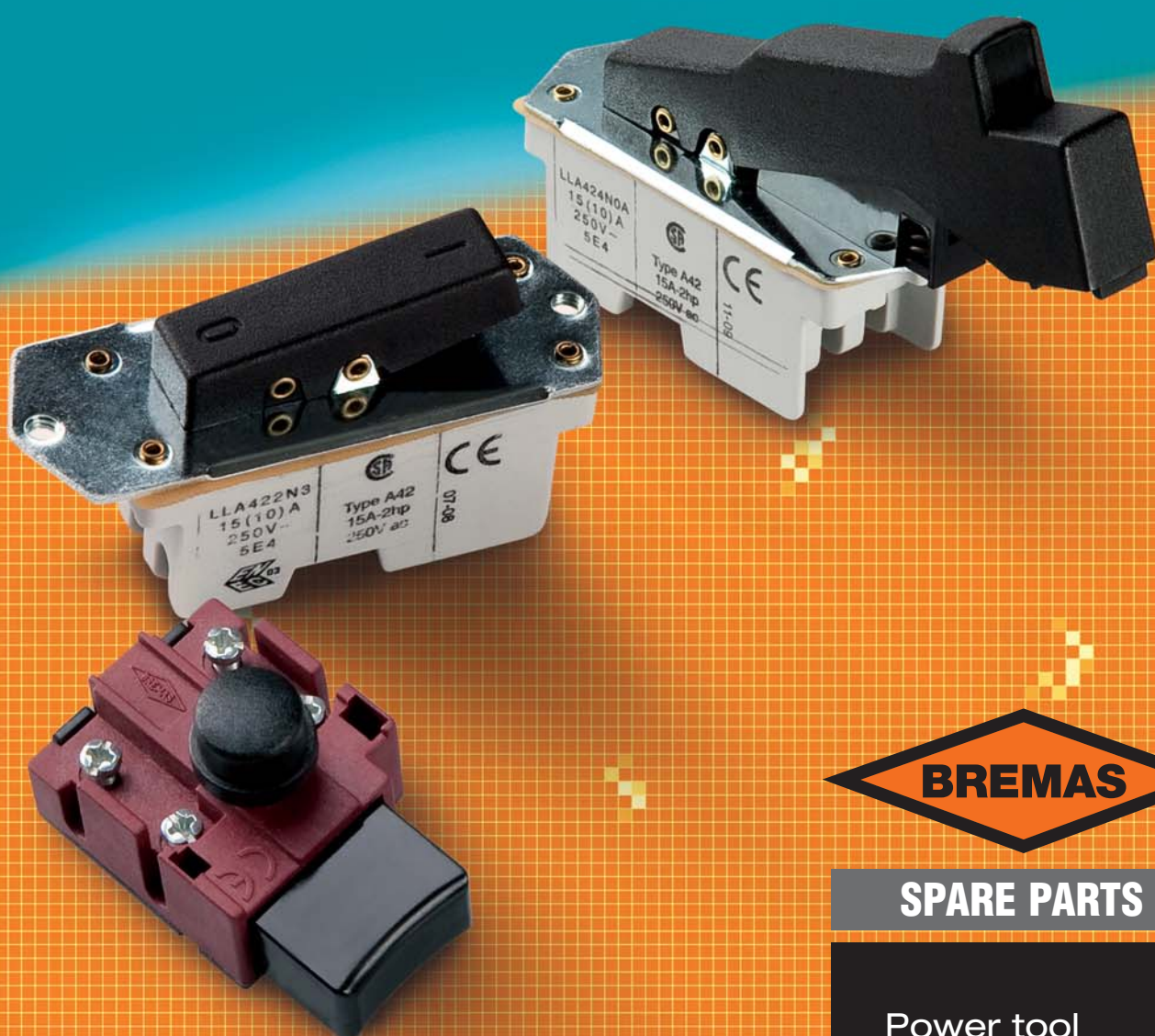
### ■ with protection

|                                                                                      | Part no.   | Type          | Description                                    | Diagram                                                                               | Pack. |
|--------------------------------------------------------------------------------------|------------|---------------|------------------------------------------------|---------------------------------------------------------------------------------------|-------|
|    | PCA00M20   | PCA 00 M20    | Metal foot switch with protection without lock |  | 1     |
|                                                                                      | PCA00PIM20 | PCA 00 PI M20 | Metal foot switch with protection with lock    |                                                                                       | 1     |
|  |            |               |                                                |                                                                                       |       |

### ■ Contact blocks

|  | Part no. | Type        | Description                 | Pack. |
|--|----------|-------------|-----------------------------|-------|
|  | ERC00100 | KIT TIPO 00 | Kit second contact block 00 | 20    |
|  | ER899000 | 00          | Fast action contact block   | 20    |
|  | ER899010 | 01          | Slow action contact block   | 20    |

Note: when ordering please indicate both the code of the operator and of the contact, because the two products are managed separately.



**BREMAS**

**SPARE PARTS**

Power tool  
switches

## Power tool switches

## ■ International standards and approvals

| Country                                        | Authority                                    | Mark of standard                                                                               | LEA202<br>LFA203 | LLA42<br>LLA43 | LNA45 | LAA65<br>LAA88 |
|------------------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------|------------------|----------------|-------|----------------|
| <b>USA/Canada</b>                              | UL investigated according to CSA             |  <sup>1</sup> |                  |                |       |                |
| <b>Canada</b>                                  | CSA International                            |  <sup>2</sup> |                  | :              |       |                |
| <b>Germany</b>                                 | Verband Deutscher Elektrotechniker           | VDE 0630 <sup>3</sup>                                                                          | +                | +              | +     | +              |
|                                                |                                              |                                                                                                | +                | +              |       | +              |
|                                                |                                              |                                                                                                | +                |                |       | +              |
| <b>Switzerland</b>                             | Schweizerischer Elektrotechnischer Verein    |               | +                | +              | +     | +              |
|                                                |                                              |                                                                                                | +                | +              |       | +              |
|                                                |                                              |                                                                                                | +                |                |       | +              |
| <b>Denmark</b>                                 | Danmarks Elektriske Materielkontrol          |               | +                | +              | +     | +              |
|                                                |                                              |                                                                                                | +                | +              |       | +              |
|                                                |                                              |                                                                                                | +                |                |       | +              |
| <b>Norway</b>                                  | Norges Elektriske Materielkontrol            |             | +                | +              | +     | +              |
|                                                |                                              |                                                                                                | +                | +              |       | +              |
|                                                |                                              |                                                                                                | +                |                |       | +              |
| <b>Sweden</b>                                  | Svenska Elektriske Materielkontrollanstalten |             | +                | +              | +     | +              |
|                                                |                                              |                                                                                                | +                | +              |       | +              |
|                                                |                                              |                                                                                                | +                |                |       | +              |
| <b>Finland</b>                                 | Sähötar-kastuskeskus                         |             | +                | +              | +     | +              |
|                                                |                                              |                                                                                                | +                | +              |       | +              |
|                                                |                                              |                                                                                                | +                |                |       | +              |
| <b>Austria</b>                                 | Österreichischer Verband für Elektrotechnik  |             | +                | +              | +     | +              |
|                                                |                                              |                                                                                                | +                | +              |       | +              |
|                                                |                                              |                                                                                                | +                |                |       | +              |
| <b>Great Britain</b>                           | British Standards Institution                | BS <sup>3</sup><br>EN 61058                                                                    | +                | +              | +     | +              |
|                                                |                                              |                                                                                                | +                | +              |       | +              |
|                                                |                                              |                                                                                                | +                |                |       | +              |
| <b>IEC International Electrical Commission</b> |                                              | IEC 61058 <sup>4</sup>                                                                         | +                | +              | +     | +              |
|                                                |                                              |                                                                                                | +                | +              |       | +              |
|                                                |                                              |                                                                                                | +                |                |       | +              |
| <b>Russian Federation</b>                      | GOST                                         |             | •                | •              | •     | •              |
|                                                |                                              |                                                                                                | •                | •              |       | •              |
|                                                |                                              |                                                                                                | •                |                |       | •              |

• Approved

+ Conforms to requirements

## Notes:

1) UL Approval File E181010

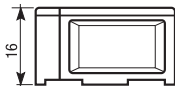
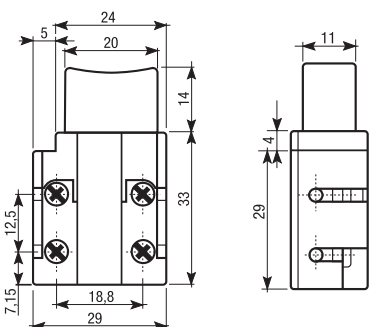
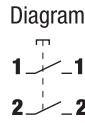
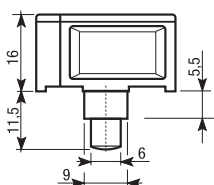
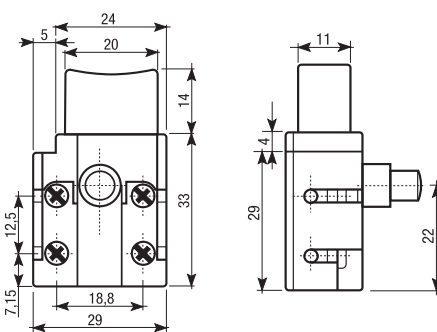
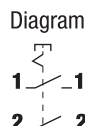
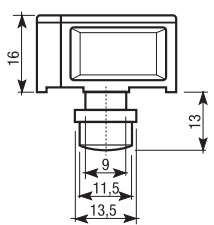
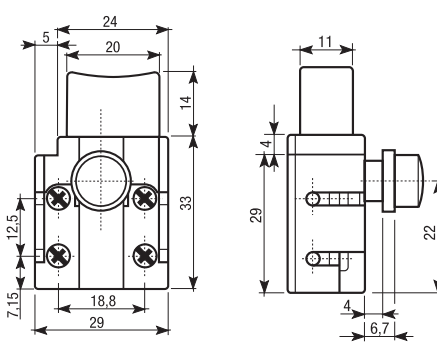
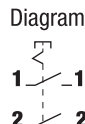
2) CSA Approval File 0282121-0-000

3) It is not required to bear a symbol but switches must conform to requirements.

4) IEC does not operate an approval scheme

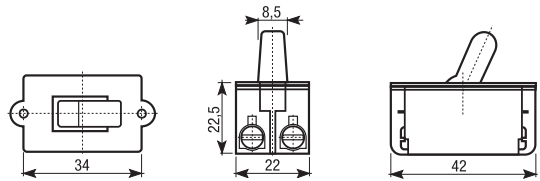
## 2 poles trigger switches

## ■ LAA65-LAA88 Series

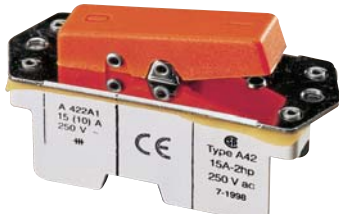
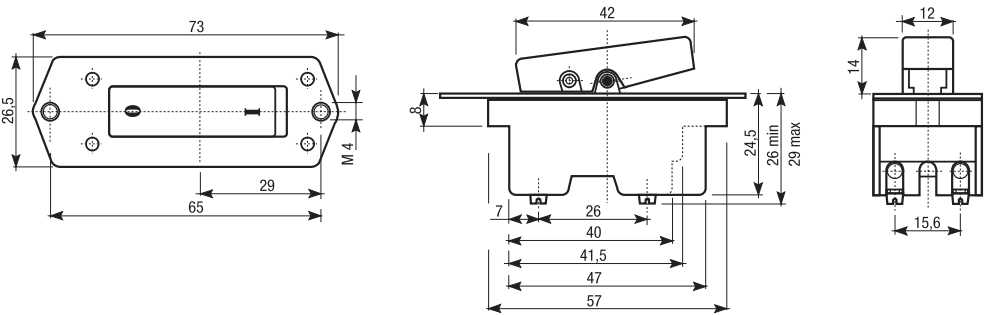
|                                                                                                                                                                            | Part no.                                                                                             | Type                                                                        | Description                                                             | Pack. |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------------------------------|-------|
| <br>      | <b>VG811400</b>                                                                                      | LAA65301                                                                    | 2 pole switch, command button without lock, 4 screw terminals           | 10    |
|                                                                                           | <p>Diagram</p>    |                                                                             |                                                                         |       |
| <br> | <b>VG813000</b>                                                                                      | LAA65311                                                                    | 2 pole switch, command button with lock in ON Ø 6, 4 screw terminals    | 10    |
| <b>VG827000</b>                                                                                                                                                            | LAA88311                                                                                             | 2 pole switch, command button with lock in ON Ø 6, 4 silver screw terminals | 10                                                                      |       |
|                                                                                         | <p>Diagram</p>  |                                                                             |                                                                         |       |
| <br> | <b>VG815500</b>                                                                                      | LAA65331                                                                    | 2 pole switch, command button with lock in ON Ø 11,5, 4 screw terminals | 10    |
|                                                                                         | <p>Diagram</p>  |                                                                             |                                                                         |       |

## 2 poles switch with lever

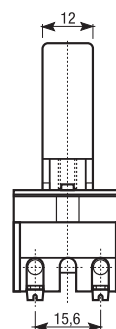
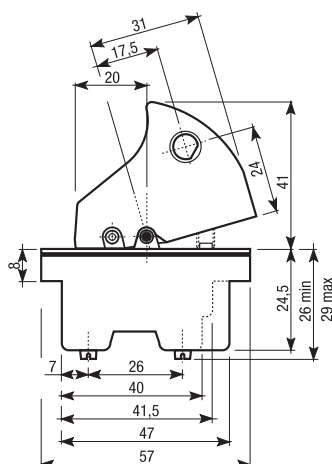
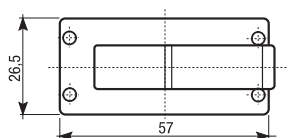
## LEA202-LEA202A Series

|                                                                                  | Part no.                                                                          | Type    | Description                     | Pack.                                                                                              |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------|---------------------------------|----------------------------------------------------------------------------------------------------|
|  | VG842900                                                                          | LEA202R | 2 pole switch with stable lever | 10                                                                                                 |
|                                                                                  |  |         |                                 | <p>Diagram</p>  |

## LLA42 Series

|                                                                                      | Part no. | Type     | Description                                                 | Pack.                                                                                                |
|--------------------------------------------------------------------------------------|----------|----------|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
|    | VG859300 | LLA422N1 | 2 pole switch with black lever, fixing holes distance 55mm  | 10                                                                                                   |
|                                                                                      | VD794500 | LLA422A1 | 2 pole switch with orange lever, fixing holes distance 55mm | 10                                                                                                   |
|                                                                                      | VG861900 | LLA422N3 | 2 pole switch with black lever, fixing holes distance 65mm  | 10                                                                                                   |
|  |          |          |                                                             | <p>Diagram</p>  |

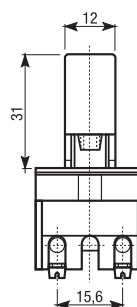
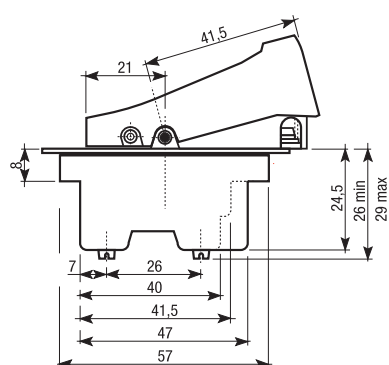
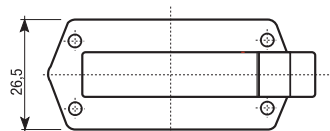
| Part no. | Type     | Description                                                            | Pack. |
|----------|----------|------------------------------------------------------------------------|-------|
| VG862700 | LLA423N0 | 2 pole switch with black unstable lever, without fixing holes, L=31 mm | 10    |



Diagram



|          |           |                                                                          |    |
|----------|-----------|--------------------------------------------------------------------------|----|
| VG865000 | LLA424N0  | 2 pole switch with black unstable lever, without fixing holes, L=41,5 mm | 10 |
| VG866899 | LLA424N0A | 2 pole switch with special lever                                         | 10 |

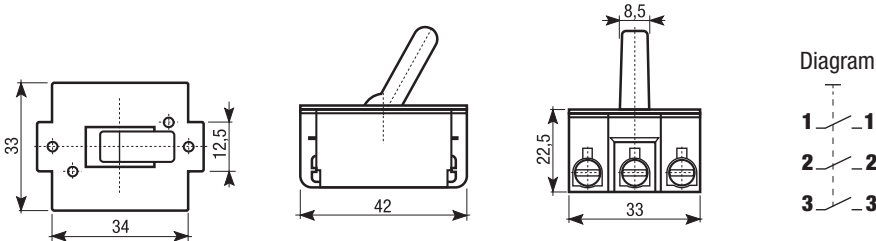
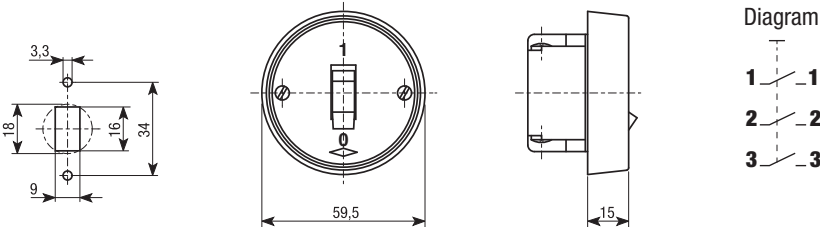


Diagram

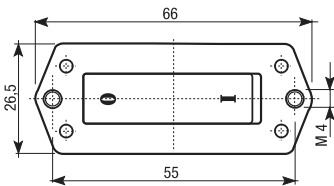
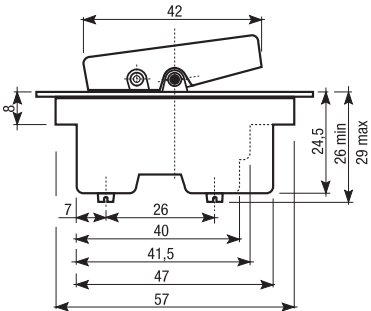
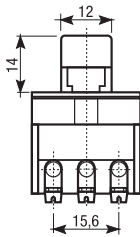
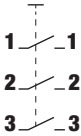


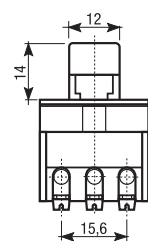
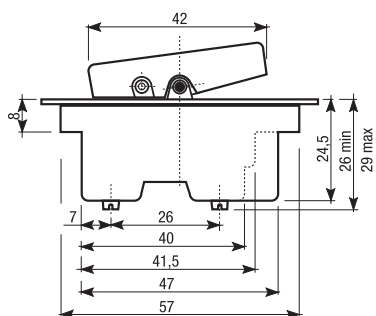
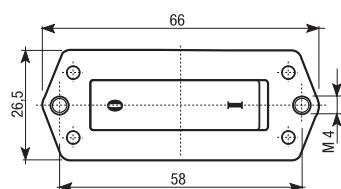
## 3 poles switch with lever

## LFA203 Series

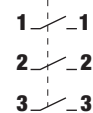
|                                                                                    | Part no.                                                                             | Type      | Description                                                | Pack. |
|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------|------------------------------------------------------------|-------|
|    | VG848600                                                                             | LFA203R   | 3 pole switch with stable lever                            | 10    |
|                                                                                    |    |           |                                                            |       |
|  | VI086100                                                                             | LFA203RPT | 3 pole switch with guarded round grey plate, rear mounting | 5     |
|                                                                                    |  |           |                                                            |       |

## ■ LLA43 Series

| Part no.                                                                                                                                                                                                                                                                                                                                                  | Type     | Description                                                                     | Pack. |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------|-------|
| VG874200                                                                                                                                                                                                                                                                                                                                                  | LLA432N1 | 3 pole switch with black stable lever,<br>fixing holes distance 55mm, L=26,5 mm | 10    |
|                                                                                                                                                                                                                                                                           |          |                                                                                 |       |
|    <p>Diagram</p>  |          |                                                                                 |       |
| VG875900                                                                                                                                                                                                                                                                                                                                                  | LLA432N2 | 3 pole switch with black stable lever,<br>fixing holes distance 58mm, L=26,5 mm | 10    |

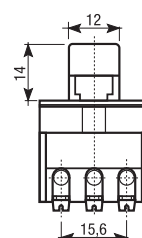
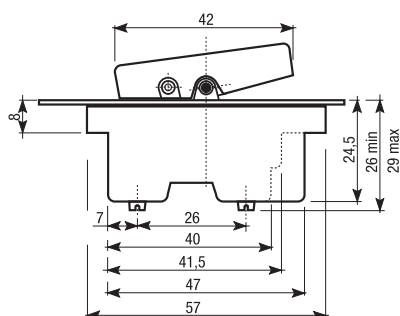
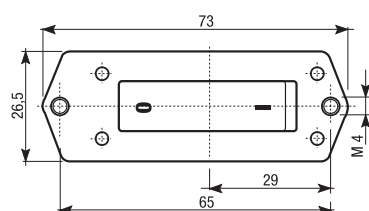


Diagram

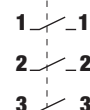


## ■ LLA43 Series

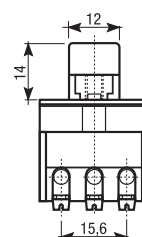
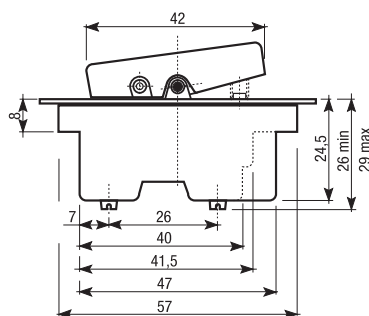
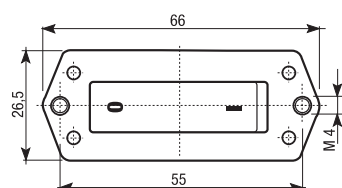
| Part no. | Type     | Description                                                       | Pack. |
|----------|----------|-------------------------------------------------------------------|-------|
| VG876700 | LLA432N3 | 3 pole switch with black stable lever, fixing holes distance 65mm | 10    |



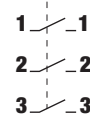
Diagram



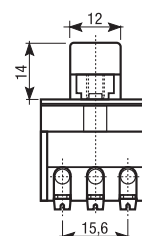
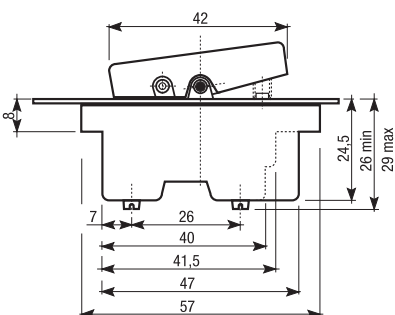
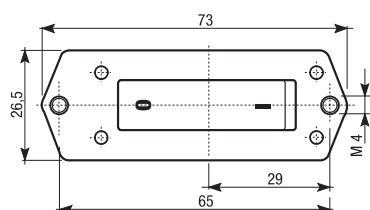
|          |          |                                                                     |    |
|----------|----------|---------------------------------------------------------------------|----|
| VG943500 | LLA438N1 | 3 pole switch with black unstable lever, fixing holes distance 55mm | 10 |
|----------|----------|---------------------------------------------------------------------|----|



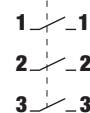
Diagram

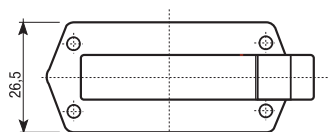
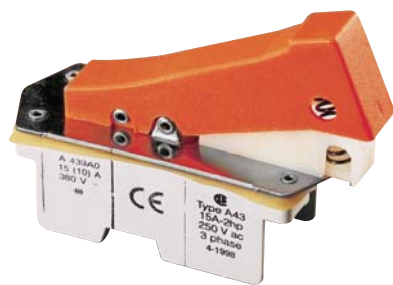


|          |          |                                                                      |    |
|----------|----------|----------------------------------------------------------------------|----|
| VD877800 | LLA438N3 | 3 pole switch with black unstable lever, fixing holes distance 65mm  | 10 |
| VD894300 | LLA438A3 | 3 pole switch with orange unstable lever, fixing holes distance 65mm | 10 |



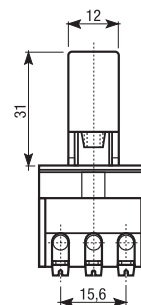
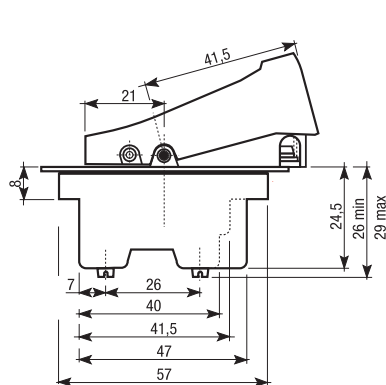
Diagram





VG882500 LLA439A0 3 pole switch with orange unstable lever, without fixing holes

10



Diagram

1 - 1  
2 - 2  
3 - 3

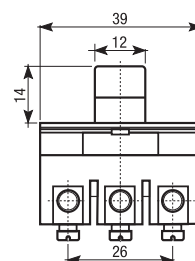
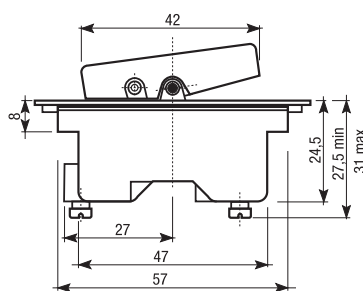
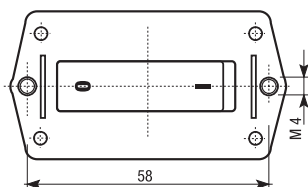
## LNA45 Series

Part no. Type Description

Pack.

VG888200 LNA452N2B 3 pole switch with black stable lever, fixing holes distance 58mm, L=39mm

10

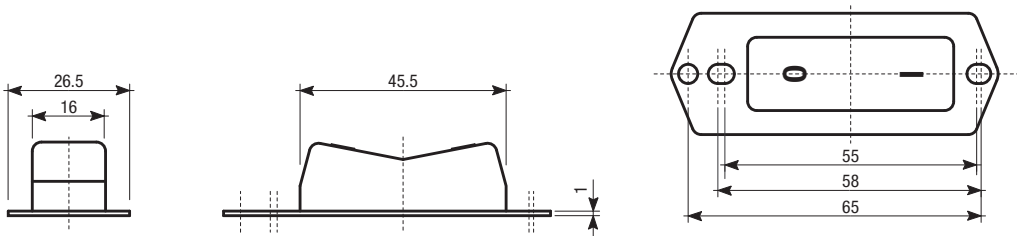


Diagram

1 - 1  
2 - 2  
3 - 3

## Accessories

### Dustproof cover

|                                                                                  | Part no.                                                                            | Type  | Description     | Pack. |
|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------|-----------------|-------|
|  | PROTG4198                                                                           | G4198 | Dustproof cover | 10    |
|                                                                                  |  |       |                 |       |



**ERSCE**

## SPARE PARTS

Multiple  
position  
switches  
FMV

## Multiple position switches **FMV**



The **FMV** series vertical mounting multiple position switches, are an important resource in the automatic production process for monitoring the moving parts of the machine.

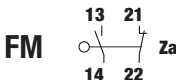
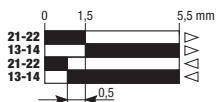
Due to their compact construction and limited dimensions in proportion to the functions performed, the multiple position switches offer the ideal solution for command centralization of automatic machines.

Multiple position switches casing is made of die cast metal alloy, while the roller plunger actuators are made of tempered steel.



## Start 30 - Pitch 12

## ■ Vertical mounting bracket 100

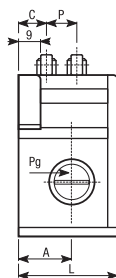
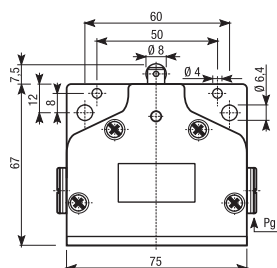
| Part no.                                                                         | Type                   | Contact block          | Circuit diagram                                                                   | Contact travel                                                                     | Roller no. | Pack. |
|----------------------------------------------------------------------------------|------------------------|------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------|-------|
|  | ER400110 FMV 2R 12 130 | Snap action<br>1NO+1NC |  |  | 2 R        | 1     |
|                                                                                  | ER401310 FMV 3R 12 130 |                        |                                                                                   |                                                                                    | 3 R        | 1     |
|                                                                                  | ER402510 FMV 4R 12 130 |                        |                                                                                   |                                                                                    | 4 R        | 1     |

Distance between two actuators 12mm, start 30mm

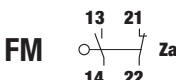
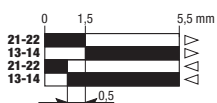
| Type          | N° Act. | P  | C  | L  | Pg   | A  |
|---------------|---------|----|----|----|------|----|
| FMV 2R 12 130 | 2       | 12 | 30 | 54 | 11   | 30 |
| FMV 3R 12 130 | 3       | 12 | 30 | 66 | 13,5 | 35 |
| FMV 4R 12 130 | 4       | 12 | 30 | 78 | 13,5 | 35 |

Notes:

- P = Pitch, distance between two actuators
- C = Distance between bracket and first actuator
- L = Overall dimension
- A = Distance between bracket and input/output holes



## ■ Vertical mounting bracket 200

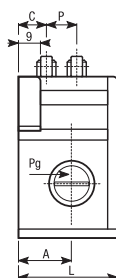
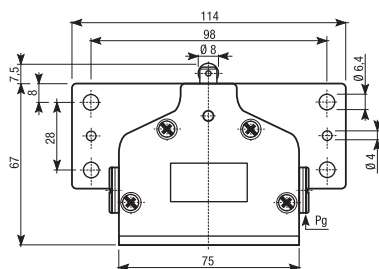
| Part no.                                                                           | Type                   | Contact block          | Circuit diagram                                                                     | Contact travel                                                                       | Roller no. | Pack. |
|------------------------------------------------------------------------------------|------------------------|------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|------------|-------|
|  | ER401410 FMV 3R 12 230 | Snap action<br>1NO+1NC |  |  | 3 R        | 1     |
|                                                                                    | ER402610 FMV 4R 12 230 |                        |                                                                                     |                                                                                      | 4 R        | 1     |

Distance between two actuators 12mm, start 30mm

| Type          | N° Act. | P  | C  | L  | Pg   | A  |
|---------------|---------|----|----|----|------|----|
| FMV 3R 12 230 | 3       | 12 | 30 | 66 | 13,5 | 35 |
| FMV 4R 12 230 | 4       | 12 | 30 | 78 | 13,5 | 35 |

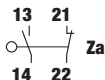
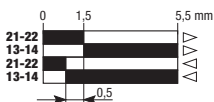
Notes:

- P = Pitch, distance between two actuators
- C = Distance between bracket and first actuator
- L = Overall dimension
- A = Distance between bracket and input/output holes



## Start 30 - Pitch 16

### Vertical mounting bracket 100

| Part no.                                                                         | Type                   | Contact block          | Circuit diagram                                                                             | Contact travel                                                                     | Roller no. | Pack. |
|----------------------------------------------------------------------------------|------------------------|------------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------|-------|
|  | ER400510 FMV 2R 16 130 | Snap action<br>1NO+1NC | <b>FM</b>  |  | 2 R        | 1     |
|                                                                                  | ER401710 FMV 3R 16 130 |                        |                                                                                             |                                                                                    | 3 R        | 1     |
|                                                                                  | ER402910 FMV 4R 16 130 |                        |                                                                                             |                                                                                    | 4 R        | 1     |

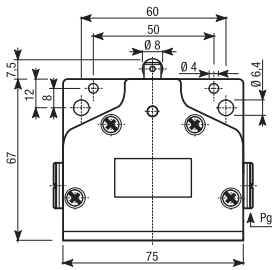
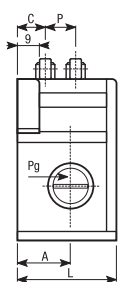
  

Distance between two actuators 16mm, start 30mm

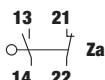
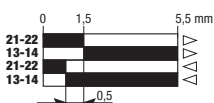
| Tipo          | N° Pos. | P  | C  | L  | Pg   | A  |
|---------------|---------|----|----|----|------|----|
| FMV 2R 16 130 | 2       | 16 | 30 | 62 | 11   | 30 |
| FMV 3R 16 130 | 3       | 16 | 30 | 78 | 13,5 | 35 |
| FMV 4R 16 130 | 4       | 16 | 30 | 94 | 13,5 | 35 |

Notes:

- P = Pitch, distance between two actuators
- C = Distance between bracket and first actuator
- L = Overall dimension
- A = Distance between bracket and input/output holes

### Vertical mounting bracket 200

| Part no.                                                                           | Type                   | Contact block          | Circuit diagram                                                                               | Contact travel                                                                       | Roller no. | Pack. |
|------------------------------------------------------------------------------------|------------------------|------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|------------|-------|
|  | ER401810 FMV 3R 16 230 | Snap action<br>1NO+1NC | <b>FM</b>  |  | 3 R        | 1     |
|                                                                                    | ER403010 FMV 4R 16 230 |                        |                                                                                               |                                                                                      | 4 R        | 1     |

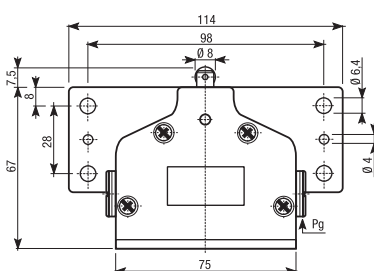
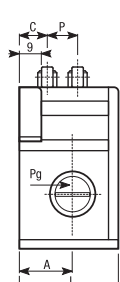
  

Distance between two actuators 16mm, start 30mm

| Tipo          | N° Pos. | P  | C  | L  | Pg   | A  |
|---------------|---------|----|----|----|------|----|
| FMV 3R 16 230 | 3       | 16 | 30 | 78 | 13,5 | 35 |
| FMV 4R 16 230 | 4       | 16 | 30 | 94 | 13,5 | 35 |

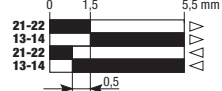
Notes:

- P = Pitch, distance between two actuators
- C = Distance between bracket and first actuator
- L = Overall dimension
- A = Distance between bracket and input/output holes

## Start 12 - Pitch 12

## ■ Vertical mounting bracket 100

| Part no.                                                                         | Type                   | Contact block          | Circuit diagram                                                                             | Contact travel                                                                     | Roller no | Pack. |
|----------------------------------------------------------------------------------|------------------------|------------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------|-------|
|  | ER400910 FMV 2R 12 100 | Snap action<br>1NO+1NC | <b>FM</b>  |  | 2 R       | 1     |
|                                                                                  | ER402110 FMV 3R 12 100 |                        |                                                                                             |                                                                                    | 3 R       | 1     |
|                                                                                  | ER403310 FMV 4R 12 100 |                        |                                                                                             |                                                                                    | 4 R       | 1     |

Distance between two actuators 12mm, start 12mm

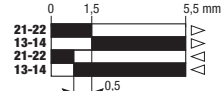
| Type          | N° Act. | P  | C  | L  | Pg   | A  |
|---------------|---------|----|----|----|------|----|
| FMV 2R 16 130 | 2       | 12 | 12 | 41 | 11   | 22 |
| FMV 3R 16 130 | 3       | 12 | 12 | 53 | 13,5 | 30 |
| FMV 4R 16 130 | 4       | 12 | 12 | 60 | 13,5 | 30 |

Notes:

- P = Pitch, distance between two actuators
- C = Distance between bracket and first actuator
- L = Overall dimension
- A = Distance between bracket and input/output holes

## Start 16 - Pitch 16

## ■ Vertical mounting bracket 100

| Part no.                                                                           | Type                   | Contact block          | Circuit diagram                                                                               | Contact travel                                                                       | Roller no | Pack. |
|------------------------------------------------------------------------------------|------------------------|------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------|-------|
|  | ER401110 FMV 2R 16 100 | Snap action<br>1NO+1NC | <b>FM</b>  |  | 2 R       | 1     |
|                                                                                    | ER402310 FMV 3R 16 100 |                        |                                                                                               |                                                                                      | 3 R       | 1     |
|                                                                                    | ER403510 FMV 4R 16 100 |                        |                                                                                               |                                                                                      | 4 R       | 1     |

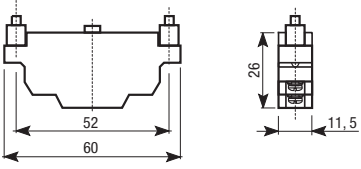
Distance between two actuators 16mm, start 16mm

| Tipo          | N° Pos. | P  | C  | L  | Pg   | A  |
|---------------|---------|----|----|----|------|----|
| FMV 2R 16 130 | 2       | 16 | 16 | 48 | 11   | 22 |
| FMV 3R 16 130 | 3       | 16 | 16 | 64 | 13,5 | 30 |
| FMV 4R 16 130 | 4       | 16 | 16 |    | 13,5 | 30 |

Notes:

- P = Pitch, distance between two actuators
- C = Distance between bracket and first actuator
- L = Overall dimension
- A = Distance between bracket and input/output holes

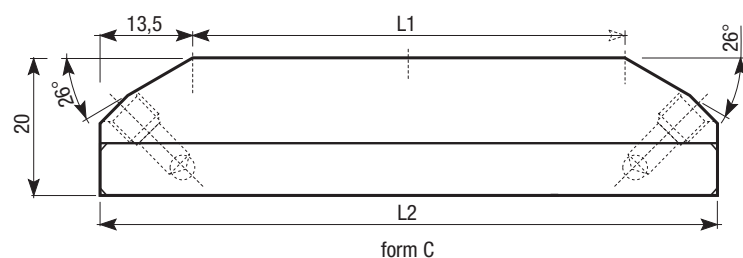
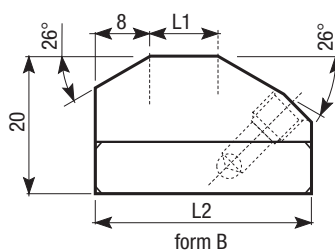
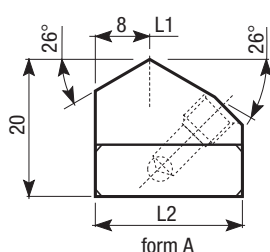
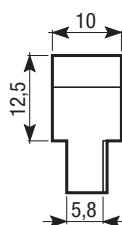
## Contact block

|                                                                                   | Part no.                                                                          | Type | Description   | Circuit diagram                                                                     | Pack. |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|---------------|-------------------------------------------------------------------------------------|-------|
|  | ER409200                                                                          | FM   | Contact block |  | 5     |
|                                                                                   |  |      |               |                                                                                     |       |

## Accessories

## Cams

|                                                                                    | Part no. | Type | Angle | Description                                                   | Pack. |
|------------------------------------------------------------------------------------|----------|------|-------|---------------------------------------------------------------|-------|
|  | ERCN0210 | C1N  | 26°   | Tempered grinded steel cams - according to DIN 69639 - form A | 1     |
|                                                                                    | ERCN0220 | C2N  | 26°   | "                                                             | 1     |
|                                                                                    | ERCN0230 | C3N  | 26°   | Tempered grinded steel cams - according to DIN 69639 - form B | 1     |
|                                                                                    | ERCN0240 | C4N  | 26°   | "                                                             | 1     |
|                                                                                    | ERCN0250 | C5N  | 26°   | Tempered grinded steel cams - according to DIN 69639 - form C | 1     |
|                                                                                    | ERCN0260 | C6N  | 26°   | "                                                             | 1     |
|                                                                                    | ERCN0270 | C7N  | 26°   | "                                                             | 1     |
|                                                                                    | ERCN0280 | C8N  | 26°   | "                                                             | 1     |
|                                                                                    | ERCN0290 | C9N  | 26°   | "                                                             | 1     |
|                                                                                    | ERCN0300 | C10N | 26°   | "                                                             | 1     |



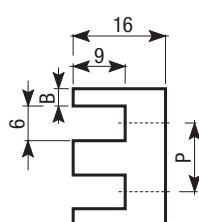
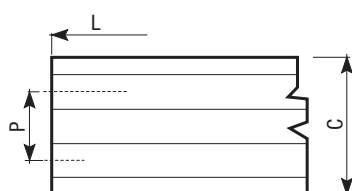
| Type | L1  | L2   | Form |
|------|-----|------|------|
| C1N  | 0   | 21,5 | A    |
| C2N  | 4   | 25,5 | B    |
| C3N  | 6,3 | 28   | B    |
| C4N  | 10  | 31,5 | B    |
| C5N  | 16  | 43   | C    |
| C6N  | 25  | 52   | C    |
| C7N  | 40  | 67   | C    |
| C8N  | 63  | 90   | C    |
| C9N  | 100 | 127  | C    |
| C10N | 125 | 152  | C    |

## Accessories

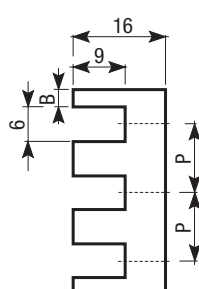
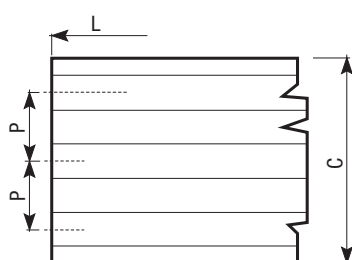
### Assembly profile



| Part no. | Type    | Description                                 | Pack. |
|----------|---------|---------------------------------------------|-------|
| ERC00010 | G2.12.1 | Assembly profile as accordance to DIN 69368 | 1     |
| ERC00020 | G2.12.2 |                                             | 1     |
| ERC00030 | G2.16.1 |                                             | 1     |
| ERC00040 | G2.16.2 |                                             | 1     |
| ERC00050 | G3.12.1 |                                             | 1     |
| ERC00060 | G3.12.2 |                                             | 1     |
| ERC00070 | G3.16.1 |                                             | 1     |
| ERC00080 | G3.16.2 |                                             | 1     |



| Type    | P  | B | C  | L    |
|---------|----|---|----|------|
| G2.12.1 | 12 | 3 | 24 | 1000 |
| G2.12.2 | 12 | 3 | 24 | 2000 |
| G2.16.1 | 16 | 5 | 32 | 1000 |
| G2.16.2 | 16 | 5 | 32 | 2000 |
| G3.12.1 | 12 | 3 | 36 | 1000 |
| G3.12.2 | 12 | 3 | 36 | 2000 |
| G3.16.1 | 16 | 5 | 48 | 1000 |
| G3.16.2 | 16 | 5 | 48 | 2000 |



Notes: P = Pitch, distance between two channel  
L = Overall rail length  
C = Overall rail width  
B = Lateral thickness  
G2 = Linear cam tray with 2 channels  
G3 = Linear cam tray with 3 channels

| Part no. | Type          | Pack | Page |
|----------|---------------|------|------|
| ER100010 | SD1           | 1    | 75   |
| ER100020 | SD2           | 1    | 75   |
| ER100030 | SD3           | 1    | 75   |
| ER100040 | SD4           | 1    | 75   |
| ER100060 | SD1G          | 1    | 75   |
| ER100070 | R10           | 40   | 71   |
| ER100080 | R01           | 40   | 71   |
| ER100090 | BL9R          | 10   | 72   |
| ER100500 | ES            | 10   | 73   |
| ER102240 | SD1M          | 1    | 75   |
| ER102250 | SD2M          | 1    | 75   |
| ER102260 | SD3M          | 1    | 75   |
| ER102270 | SD4M          | 1    | 75   |
| ER103010 | SC1-90        | 1    | 74   |
| ER103550 | SC1-50        | 1    | 74   |
| ER104000 | SM 1 V        | 1    | 76   |
| ER104010 | SM 2 V        | 1    | 76   |
| ER104020 | SM 3 V        | 1    | 76   |
| ER104030 | SM 4 0        | 1    | 76   |
| ER104040 | SM 6 0        | 1    | 76   |
| ER104050 | SM 8 0        | 1    | 76   |
| ER105000 | SV 1 SF       | 1    | 76   |
| ER105010 | SV 2 SF       | 1    | 76   |
| ER105020 | SV 3 SF       | 1    | 76   |
| ER105030 | SO 4 SF       | 1    | 76   |
| ER105040 | SV 4 SF       | 1    | 76   |
| ER105050 | SO 6 SF       | 1    | 76   |
| ER105060 | SV 6 SF       | 1    | 76   |
| ER105080 | SO 12 SF      | 1    | 76   |
| ER200380 | M3-04-NO+NC   | 20   | 54   |
| ER200390 | M3-05-NO+NC   | 20   | 54   |
| ER200400 | M3-06-NO+NC   | 20   | 54   |
| ER200420 | M3-08-NO+NC   | 10   | 55   |
| ER200430 | M3-09-NO+NC   | 10   | 55   |
| ER200450 | M3-11-NO+NC   | 20   | 55   |
| ER200470 | M3-13-NO+NC   | 20   | 56   |
| ER200480 | M3-14-NO+NC   | 20   | 56   |
| ER200690 | M3PROTA       | 20   | 56   |
| ER400110 | FMV 2R 12 130 | 1    | 91   |
| ER400510 | FMV 2R 16 130 | 1    | 92   |
| ER400910 | FMV 2R 12 100 | 1    | 93   |
| ER401110 | FMV 2R 16 100 | 1    | 93   |
| ER401310 | FMV 3R 12 130 | 1    | 91   |
| ER401410 | FMV 3R 12 230 | 1    | 91   |
| ER401710 | FMV 3R 16 130 | 1    | 92   |
| ER401810 | FMV 3R 16 230 | 1    | 92   |
| ER402110 | FMV 3R 12 100 | 1    | 93   |
| ER402310 | FMV 3R 16 100 | 1    | 93   |
| ER402510 | FMV 4R 12 130 | 1    | 91   |
| ER402610 | FMV 4R 12 230 | 1    | 91   |
| ER402910 | FMV 4R 16 130 | 1    | 92   |
| ER403010 | FMV 4R 16 230 | 1    | 92   |
| ER403310 | FMV 4R 12 100 | 1    | 93   |
| ER403510 | FMV 4R 16 100 | 1    | 93   |
| ER409200 | FM            | 5    | 94   |
| ER500930 | PR1+AR        | 10   | 65   |
| ER501800 | BA9N.2        | 10   | 69   |
| ER501810 | BA9N.3        | 10   | 69   |
| ER501820 | BA9N.4        | 10   | 69   |
| ER502010 | IPR1          | 10   | 62   |
| ER502020 | IPR2          | 10   | 62   |
| ER502030 | IPR3          | 10   | 62   |
| ER502040 | IPR4          | 10   | 62   |

| Part no. | Type         | Pack | Page |
|----------|--------------|------|------|
| ER502150 | IPF2         | 10   | 62   |
| ER502320 | IPFB2-40     | 10   | 63   |
| ER502350 | IPFBPT2      | 10   | 63   |
| ER502400 | IPFBC2       | 10   | 64   |
| ER502420 | IPFB2-30     | 10   | 63   |
| ER502450 | IPL2.2+3     | 10   | 68   |
| ER502460 | IPL2.2+3/SIM | 10   | 68   |
| ER502530 | IP2.2+3/SIM  | 10   | 68   |
| ER502570 | IP2.2S+3/SIM | 10   | 68   |
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| SV 6 SF   | ER105060 | 1    | 76   |
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note

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## 1. SUBJECT / SPHERE OF APPLICATION

1.1 This document constitutes the terms and conditions of sale of Bremas Ersce S.p.A, a single-member company, head office in Liscate (MI), via Milano 26.

## 2. INTRODUCTION

2.1 The terms and conditions of sale, unless otherwise stated in writing for any exceptions or modifications, are applied to the delivery of products manufactured and purchased by Bremas Ersce S.p.A.. Any different terms of the contract which are submitted, attached, quoted, added or modified by the Client do not apply to without written acceptance by Bremas Ersce S.p.A..

2.2 The terms and conditions of sale refer to all articles currently offered by Bremas Ersce S.p.A. together with all future models and variants which may be included and reported in its catalogues, drawings, data sheets and brochures. Bremas Ersce S.p.A. does hereby reserve the right to modify, add or vary in any time the manufacture of one or more products, without prior notice.

2.3 Every order sent by a Client and confirmed by Bremas Ersce S.p.A. is considered irrevocable and refers to these terms and conditions of sale which are considered tacitly accepted in every respect.

## 3. ORDER CONFIRMATIONS

3.1 All the orders shall be accepted by Bremas Ersce S.p.A. sending an order confirmation. These confirms report the codes of ordered products, the prices, the delivery terms, the payments terms and / or other information which can be useful for the definition of the contract.

3.2 No order submitted shall be deemed to be accepted unless and until confirmed by Bremas Ersce S.p.A. with the related order confirmation.

## 4. PRICES AND METHODS OF PAYMENT

4.1 The quoted prices are those referred to the confirmation order; they can be however modified according to unforeseeable variations of costs and currency exchange.

4.2 Unless otherwise stated between the parties, all prices do not include Value Added Tax, packaging and transport costs which shall be borne by the Client.

4.3 The invoices are to be irrevocably paid in due time according to the indicated terms. In case of non-payment in due time or partial payment, the Seller may suspend further deliveries of the already ordered products. Bremas Ersce S.p.A. shall besides have the right to:

- consider the contract immediately terminated
- charge interests on delayed payments on a day to day basis at the debtor rate
- choose any options to recover the credit, as well any proceedings.

## 5. DELIVERY AND TRANSPORT TERMS

5.1 Unless otherwise agreed in writing, the delivery terms shown in the order confirmation do apply to the goods leaving from Bremas Ersce plant. Value Added Tax, insurance and transport costs are charged to the Client.

5.2 The delivery terms indicated in the order confirmations are binding except for strikes, raw materials lack, moulds breakdown or other inconveniences related to the economic activity. In case of late deliveries, the Seller does not accept any responsibilities for direct or indirect damages to the Client, unless otherwise stated between the parties.

5.3 The goods travel at the Client's risks. At the receipt of the goods, the Client shall immediately control that the delivered products are conform in their weight, number, quantity and typology with the ones described in the delivery note.

5.4 All claims for differences found in the goods must be submitted in writing by the Client to Bremas Ersce S.p.A. within eight days after date of receipt of the goods.

5.5 Bremas Ersce S.p.A. does not assume any responsibilities for transport delays, damages or goods' loss.

## 6. WARRANTY

6.1 Bremas Ersce S.p.A. warrants its components for a period of 24 months from the delivery date as for the functional conformity and the technical characteristics indicated in the drawings, data sheets or specifications issued by Bremas Ersce S.p.A..

6.2 The warranty does exclusively apply to products returned within the warranty expiration and considered as defective by Bremas Ersce S.p.A..

6.3 The warranty shall be considered the commitment of Bremas Ersce S.p.A. at its own discretion, to replace free of charge returned products considered as defective, delivering with transport to the Client's costs from the plant in Liscate (MI). The Seller may as well credit the relevant value. Except as otherwise stated in writing by the management of Bremas Ersce S.p.A., the Client shall indemnify the Seller against any compensations for direct or indirect damages and charges such as:

- costs assumed for the replacement of the components
- costs assumed in the plants of the Client
- costs for "recall" actions
- costs assumed for the selection of materials or replacement of entire instalments

6.4 No warranty is expected for all products which will result defective due to the following circumstances which are not related to manufacture defects: carelessness; Usage non-compliant with the technical specifications; Mistakes in the project or manufacture of the advice in which the components are inserted; Incorrect maintenance; Maintenance made by non-authorized staff; Transport damages.

6.5 No warranty is moreover expected in case of wrong usage of the device.

## 7. PATENT RIGHTS

7.1 Bremas Ersce S.p.A. assures that the supplied products do not violate any patent rights of a third party, that they are not given in pawn or mortgaged and are free from any obligations.

7.2 All knowledge and restricted information acquired by the Client and imparted to it by Bremas Ersce S.p.A. shall be treated as confidential.

## 8. COMPETENT COURT OF JURISDICTION

Any disputes shall be referred to the competent court of jurisdiction in Milano.



**Bremas Ersce SpA**

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