

Pilot devices



ABB has a complete range of pushbuttons, selector switches and pilot lights, suitable to meet every customer's specific need. The range is available all over the world together with the extensive range of ABB Low Voltage Products.

Complete range

The pilot devices assortment is available in two ranges; the 'Modular range' and the 'Compact range'.

The 'Compact range'

is especially developed for customers who need simple but reliable and at the same time economic solutions.

The compact range includes push-buttons, selector switches and pilot lights and gives features as:

- Less stock-keeping
- "All-in-one function". One Order Code= One complete function

The compact range can easily be combined with our modular range of Pilot Devices as they have the same front design.



The 'Modular range'

is characterized by high flexibility.

By combining a few basic components together with a wide range of accessories a large number of different devices can be built.

- Up to six contact blocks (3+3) on one actuator
- One lamp block for filament bulbs, LEDs and neon bulbs.



22 mm or 30 mm Both ranges for 22 mm can be used in 30 mm mounting holes (1.5 - 4 mm panels) by combining the pilot device with a 30 mm adaptor.

Emergency stop devices

The emergency stop range from ABB was one of the first to pass the tough tests required to fulfil the standard IEC 947-5-5.

The product standard for electrical emergency stop devices with mechanical latching function, IEC 60 947-5-5, verifies the demands from Machine Directive and its reference standard EN 60204 (Machine Safety Standard)



Signal Towers and Signal Beacons

A wide range of signal devices with optical and audible signal elements.

For Signal Towers up to five elements can be used. With bracket for 2-sided mounting up to ten elements can be mounted.



Special components

such as:

- Reset pushbuttons with or without shaft
- Buzzer
- Potentiometer



Assembled stations

There are assembled stations of two types:
In non-metallic enclosures and in metallic enclosures.
Both types of enclosures available in 1-, 2-, 3-, 4- or 6-seat.

Accessories

There is a wide assortment of accessories including legend plates, bulbs/LEDs, special blocks and enclosures.



Fast and easy to install

All pilot devices are easy to install - no tools required. Spring-loaded tabs ensure that actuators and legend plates are in correct position.

Aesthetic – Functional – Flexible

- The pilot devices have an aesthetic and functional design - Tight, withstanding even the toughest environment. No additional protective boot is needed.
- Large text and push area, clear and visible markings for quick and easy handling.
- Two different choices of bezels - black plastic, and metal.
- Contacts are provided with wiping action. The tips of the contacts rub against each other each time the contacts close, thus forcing dust and oxide to the side. The NC block has forced breaking for high performance in safety circuits.

Worldwide availability

ABB is represented in over 130 countries. Our pilot devices meets all major international and national



The assortment in this catalogue is a selection of the complete product range of our Pilot Devices. For an overview – please see page 4.

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For more information

Compact pilot devices

– see Catalogue 1SFC151001B0201

Pilot devices 22 mm (Main Catalogue)

– see Catalogue 1SFC261001-en

Ordering details





When ordering please give either the "Type" or the "Order Code"

The products described in this catalogue can be subject to change (design, dimensions, technical data, etc.) without prior notice.





Pilot Devices






Overview

Pilot Devices, Compact Range (The complete range is presented in this catalogue)

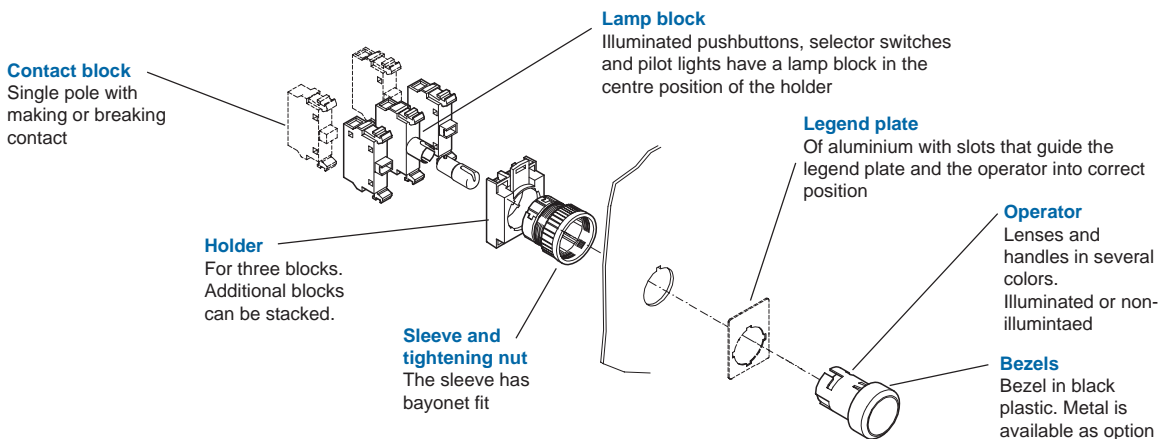
| | | | |
|--|---|---|---|
|  |  |  |  |
| Pushbuttons | Selector switches | Pilot light | |
| Flush button Momentary or Maintained | 2-position Maintained or Momentary | with integrated LED | |
| Extended button Momentary or Maintained | 3-position Maintained or Momentary | Illuminated (see page 7) | Illuminated (see page 7) |
| Non-illuminated (see page 5) | Non-illuminated (see page 6) | | |
| Non-illuminated (see page 5) | Non-illuminated (see page 6) | | |

Pilot Devices, Modular range (Assortment presented in this catalogue)

| | | | |
|--|---|--|---|
|  |  |  |  |
| Pushbuttons | Selector switches | Key-operated selector switches | Pilot light |
| Flush button Momentary or Maintained | 2-position Maintained | 2-position Maintained | Illuminated (see page 12) |
| Extended button Momentary or maintained | 3-position Maintained | 3-position Maintained | |
| Non-illuminated (see page 8) | Non-illuminated (see page 10) | Non-illuminated (see page 10) | |
| Illuminated (see page 9) | Illuminated (see page 10) | Non-illuminated (see page 10) | |
| Illuminated (see page 9) | Illuminated (see page 10) | | |

| | | | | |
|--|---|---|--|---|
|  |  |  |  |  |
| Double pushbuttons | Mushroom pushbuttons | Emergency stop pushbuttons | Buzzer | Potentiometer/ Resistor |
| Non-illuminated (see page 8) Two buttons mounted in one hole. Green upper button, red lower button | Momentary | Twist release or Pull release | Non-illuminated (see page 12) | Non-illuminated (see page 12) |
| Illuminated (see page 9) Two buttons plus one pilot light mounted in one hole. Green upper button, red lower button | Non-illuminated (see page 8) | Non-illuminated (see page 11) | | |
| | Illuminated (see page 9) | Illuminated (see page 11) | | |

Example showing the building-up of an illuminated pushbutton with lamp block and four contact blocks mounted in a panel.



Pushbuttons - Compact range

Non-illuminated

Compact range



| Designation, design and function | Type | Order Code | Weight, kg |
|---|-------------|--------------------|------------|
| Pushbutton with flush button Momentary | | | |
| Contacts included: | | | |
| 1 NO | CP1-10■-10 | 1SFA 619 100 R101□ | 0.018 |
| 2 NO | CP1-10■-20 | 1SFA 619 100 R102□ | 0.022 |
| 1 NC | CP1-10■-01 | 1SFA 619 100 R104□ | 0.018 |
| 2 NC | CP1-10■-02 | 1SFA 619 100 R105□ | 0.022 |
| 1 NO +1 NC | CP1-10■-11 | 1SFA 619 100 R107□ | 0.022 |
| Pushbutton with flush button Maintained | | | |
| Contacts included: | | | |
| 1 NO | CP2-10■-10 | 1SFA 619 101 R101□ | 0.018 |
| 2 NO | CP2-10■-20 | 1SFA 619 101 R102□ | 0.022 |
| 1 NC | CP2-10■-01 | 1SFA 619 101 R104□ | 0.018 |
| 2 NC | CP2-10■-02 | 1SFA 619 101 R105□ | 0.022 |
| 1 NO +1 NC | CP2-10■-11 | 1SFA 619 101 R107□ | 0.022 |
| Pushbutton with extended button Momentary | | | |
| Contacts included: | | | |
| 1 NO | CP3-10■-10 | 1SFA 619 102 R101□ | 0.019 |
| 2 NO | CP3-10■-20 | 1SFA 619 102 R102□ | 0.022 |
| 1 NC | CP3-10■-01 | 1SFA 619 102 R104□ | 0.019 |
| 2 NC | CP3-10■-02 | 1SFA 619 102 R105□ | 0.022 |
| 1 NO +1 NC | CP3-10■-11 | 1SFA 619 102 R107□ | 0.022 |
| Pushbutton with extended button Maintained | | | |
| Contacts included: | | | |
| 1 NO | CP4-10■-10 | 1SFA 619 103 R101□ | 0.019 |
| 2 NO | CP4-10■-20 | 1SFA 619 103 R102□ | 0.022 |
| 1 NC | CP4-10■-01 | 1SFA 619 103 R104□ | 0.019 |
| 2 NC | CP4-10■-02 | 1SFA 619 103 R105□ | 0.022 |
| 1 NO +1 NC | CP4-10■-11 | 1SFA 619 103 R107□ | 0.022 |
| Pushbutton with flush button Momentary | | | |
| White button with black I | | | |
| Contacts included: 1 NO | CP11-10W-10 | 1SFA 619 110 R1015 | 0.018 |
| Pushbutton with flush button Momentary | | | |
| White button with black II | | | |
| Contacts included: 1 NO | CP12-10W-10 | 1SFA 619 120 R1015 | 0.018 |
| Pushbutton with extended button Momentary | | | |
| Black button with white 0 | | | |
| Contacts included: | | | |
| 1 NC | CP33-10B-01 | 1SFA 619 132 R1046 | 0.018 |

¹⁾ For bezel in metal replace '1' in the Type CPX-1 0X- XX with the figure '3'.

Color code for pushbuttons

| | Type | Order Code |
|--------|------------|--------------------|
| | CPX-10■-XX | 1SFA 619 1XX R10X□ |
| | ■ | □ |
| Red | R | 1 |
| Green | G | 2 |
| Yellow | Y | 3 |
| Blue | L | 4 |
| White | W | 5 |
| Black | B | 6 |
| Grey | U | 7 |

Ordering example – Pushbutton

Requested: A compact pushbutton, momentary, with red extended button and one NO contact.

Order: 10 pieces of **CP3-10R-10**

Minimum order quantity: 10 pieces
Packing: 10 pieces/plastic bag, 10 bags/box



Ordering example – Selector switch

Requested: A red compact selector switch with three positions, Momentary, spring return from A to B and maintained position in C.

Order: 10 pieces of **C3SS7-10R-02**

Minimum order quantity: 10 pieces
Packing: 10 pieces/plastic bag, 10 bags/box



Selector switches - Compact range

Non-illuminated



| Designation, design and function | Type | Order Code | Weight, kg |
|---|--|--|---|
| Selector switch, short handle. Two pos. Maintained <u>Contacts included:</u> 1 NO 2 NO 1 NC 2 NC 1 NO +1 NC | C2SS1-10 ■-10 ■-20 ■-01 ■-02 ■-11 | 1SFA 619 200 R101□ 1SFA 619 200 R102□ 1SFA 619 200 R104□ 1SFA 619 200 R105□ 1SFA 619 200 R107□ | 0.020 0.024 0.020 0.024 0.024 |
| Selector switch, short handle. Two pos. Maintained <u>Contacts included:</u> 1 NO 2 NO 1 NC 2 NC 1 NO +1 NC | C2SS2-10 ■-10 ■-20 ■-01 ■-02 ■-11 | 1SFA 619 201 R101□ 1SFA 619 201 R102□ 1SFA 619 201 R104□ 1SFA 619 201 R105□ 1SFA 619 201 R107□ | 0.020 0.024 0.020 0.024 0.024 |
| Selector switch, short handle. Two pos. Momentary <u>Contacts included:</u> 1 NO 2 NO 1 NC 2 NC 1 NO +1 NC | C2SS3-10 ■-10 ■-20 ■-01 ■-02 ■-11 | 1SFA 619 202 R101□ 1SFA 619 202 R102□ 1SFA 619 202 R104□ 1SFA 619 202 R105□ 1SFA 619 202 R107□ | 0.020 0.024 0.020 0.024 0.024 |
| Selector switch, short handle. Three pos. Maintained <u>Contacts included:</u> 2 NO 2 NC 1 NO + 1 NC | C3SS1-10 ■-20 ■-02 ■-11 | 1SFA 619 210 R102□ 1SFA 619 210 R105□ 1SFA 619 210 R107□ | 0.024 0.024 0.024 |
| Selector switch, short handle. Three pos. Momentary <u>Contacts included:</u> 2 NO 2 NC 1 NO + 1 NC | C3SS2-10 ■-20 ■-02 ■-11 | 1SFA 619 211 R102□ 1SFA 619 211 R105□ 1SFA 619 211 R107□ | 0.024 0.024 0.024 |
| Selector switch, short handle. Three pos. Momentary <u>Contacts included:</u> 2 NO 2 NC 1 NO + 1 NC | C3SS3-10 ■-20 ■-02 ■-11 | 1SFA 619 212 R102□ 1SFA 619 212 R105□ 1SFA 619 212 R107□ | 0.024 0.024 0.024 |
| Selector switch, short handle. Three pos. Momentary <u>Contacts included:</u> 2 NO 2 NC 1 NO + 1 NC | C3SS7-10 ■-20 ■-02 ■-11 | 1SFA 619 216 R102□ 1SFA 619 216 R105□ 1SFA 619 216 R107□ | 0.024 0.024 0.024 |

1) For bezel in metal replace '1' in the Type CXSSX-1 0X- XX with the figure '3'.

Ordering example – see page 10

Color code

| Color | Type | Order Code |
|-------|---------------------|-------------------------|
| Red | CXSSX-10■-XX ■ R | 1SFA 619 2XX R10X□ 1 |
| Black | ■ B | 6 |
| Grey | ■ U | 7 |

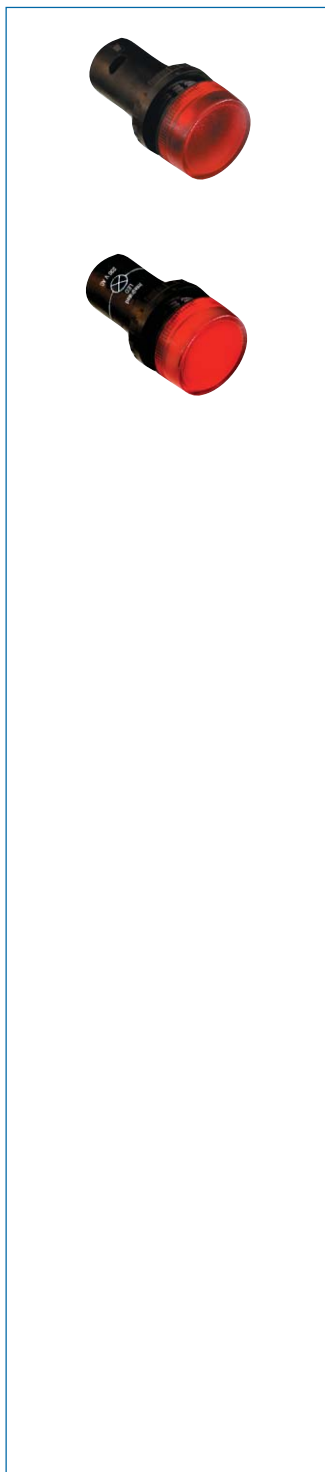
Contacts actuated

| Two position selector switch | | | | Three position selector switch | | | | |
|------------------------------|---|---|---|--------------------------------|---|---|---|---|
| Contacts included, | | | | Contacts included, | | | | |
| actuated in position C | | | | actuated in position: | | | | |
| NC NO NC NO | | | | A C | | | | |
| 11 13 21 23 | | | | NC NO NC NO | | | | |
| 12 14 22 24 | | | | 21 23 11 13 | | | | |
| | | | | 22 24 12 14 | | | | |
| 1NO | – | 1 | – | 2NO | – | 1 | – | 1 |
| 2NO | – | 1 | – | 2NC | 1 | – | – | 1 |
| 1NC | 1 | – | – | 1NO + 1NC | 1 | – | – | 1 |
| 2NC | 1 | – | 1 | | | | | |
| 1NO + 1NC | – | 1 | 1 | | | | | |

Pilot lights - Compact range

Illuminated

Compact range



| Designation, design and function | Type | Order Code | Weight, kg |
|--|---------|--------------------|------------|
| Pilot light Ba 9s base, bulb not included. See page 15 | | | |
| Color: | | | |
| Red | CL-100R | 1SFA 619 402 R1001 | 0.018 |
| Green | CL-100G | 1SFA 619 402 R1002 | 0.018 |
| Yellow | CL-100Y | 1SFA 619 402 R1003 | 0.018 |
| Blue | CL-100L | 1SFA 619 402 R1004 | 0.018 |
| White | CL-100W | 1SFA 619 402 R1005 | 0.018 |
| Clear | CL-100C | 1SFA 619 402 R1008 | 0.018 |

| Pilot light with integrated LED Service life >50 000 hours | | | | | | Type | Order Code | Weight, kg |
|---|--------------------|-----------------|--------|------------------|------------------|---------|--------------------|------------|
| Rated voltage V | Rated current (mA) | Type of current | Color | Lumi-nance (mcd) | Wave-length (nm) | | | |
| 12 ¹⁾ | 30 | DC | Red | 60 | 625 | CL-501R | 1SFA 619 402 R5011 | 0.023 |
| 12 ¹⁾ | 15 | DC | Green | 126 | 520 | CL-501G | 1SFA 619 402 R5012 | 0.023 |
| 12 ¹⁾ | 30 | DC | Yellow | 60 | 590 | CL-501Y | 1SFA 619 402 R5013 | 0.023 |
| 12 ¹⁾ | 30 | DC | Blue | 22 | 470 | CL-501L | 1SFA 619 402 R5014 | 0.023 |
| 12 ¹⁾ | 30 | DC | White | 88 | x=3 y=3 | CL-501W | 1SFA 619 402 R5015 | 0.023 |
| 24 | 15 | AC/DC | Red | 60 | 625 | CL-502R | 1SFA 619 402 R5021 | 0.023 |
| 24 | 15 | AC/DC | Green | 126 | 520 | CL-502G | 1SFA 619 402 R5022 | 0.023 |
| 24 | 15 | AC/DC | Yellow | 60 | 590 | CL-502Y | 1SFA 619 402 R5023 | 0.023 |
| 24 | 15 | AC/DC | Blue | 22 | 470 | CL-502L | 1SFA 619 402 R5024 | 0.023 |
| 24 | 15 | AC/DC | White | 88 | x=3 y=3 | CL-502W | 1SFA 619 402 R5025 | 0.023 |
| 48 | 15 | AC/DC | Red | 60 | 625 | CL-504R | 1SFA 619 402 R5041 | 0.023 |
| 48 | 15 | AC/DC | Green | 126 | 520 | CL-504G | 1SFA 619 402 R5042 | 0.023 |
| 48 | 15 | AC/DC | Yellow | 60 | 590 | CL-504Y | 1SFA 619 402 R5043 | 0.023 |
| 48 | 15 | AC/DC | Blue | 22 | 470 | CL-504L | 1SFA 619 402 R5044 | 0.023 |
| 48 | 15 | AC/DC | White | 88 | x=3 y=3 | CL-504W | 1SFA 619 402 R5045 | 0.023 |
| 60 | 15 | AC/DC | Red | 60 | 625 | CL-505R | 1SFA 619 402 R5051 | 0.023 |
| 60 | 15 | AC/DC | Green | 126 | 520 | CL-505G | 1SFA 619 402 R5052 | 0.023 |
| 60 | 15 | AC/DC | Yellow | 60 | 590 | CL-505Y | 1SFA 619 402 R5053 | 0.023 |
| 60 | 15 | AC/DC | Blue | 22 | 470 | CL-505L | 1SFA 619 402 R5054 | 0.023 |
| 60 | 15 | AC/DC | White | 88 | x=3 y=3 | CL-505W | 1SFA 619 402 R5055 | 0.023 |
| 110-130 | 15 | AC | Red | 60 | 625 | CL-513R | 1SFA 619 402 R5131 | 0.023 |
| 110-130 | 15 | AC | Green | 126 | 520 | CL-513G | 1SFA 619 402 R5132 | 0.023 |
| 110-130 | 15 | AC | Yellow | 60 | 590 | CL-513Y | 1SFA 619 402 R5133 | 0.023 |
| 110-130 | 15 | AC | Blue | 22 | 470 | CL-513L | 1SFA 619 402 R5134 | 0.023 |
| 110-130 | 15 | AC | White | 88 | x=3 y=3 | CL-513W | 1SFA 619 402 R5135 | 0.023 |
| 110-130 | 15 | DC | Red | 60 | 625 | CL-515R | 1SFA 619 402 R5151 | 0.023 |
| 110-130 | 15 | DC | Green | 126 | 520 | CL-515G | 1SFA 619 402 R5152 | 0.023 |
| 110-130 | 15 | DC | Yellow | 60 | 590 | CL-515Y | 1SFA 619 402 R5153 | 0.023 |
| 110-130 | 15 | DC | Blue | 22 | 470 | CL-515L | 1SFA 619 402 R5154 | 0.023 |
| 110-130 | 15 | DC | White | 88 | x=3 y=3 | CL-515W | 1SFA 619 402 R5155 | 0.023 |
| 230 | 15 | AC | Red | 60 | 625 | CL-523R | 1SFA 619 402 R5231 | 0.023 |
| 230 | 15 | AC | Green | 126 | 520 | CL-523G | 1SFA 619 402 R5232 | 0.023 |
| 230 | 15 | AC | Yellow | 60 | 590 | CL-523Y | 1SFA 619 402 R5233 | 0.023 |
| 230 | 15 | AC | Blue | 22 | 470 | CL-523L | 1SFA 619 402 R5234 | 0.023 |
| 230 | 15 | AC | White | 88 | x=3 y=3 | CL-523W | 1SFA 619 402 R5235 | 0.023 |

¹⁾ Care should be taken for 12 V version where + and - must be correctly installed (this is marked on the product, X1 (+) and X2 (-)).

Ordering example – see page 10

Ordering

Minimum order quantity: 10 pieces
Packing: 10 pieces/plastic bag, 10 bags/box

Pushbuttons – Modular range

Non-illuminated



| Designation, design and function | Type | Order Code | Weight, kg |
|---|--|---|---|
| Pushbutton with flush button Momentary Contact blocks and holder: 1 NO 1 NC 1 NO +1 NC 2 NO 2 NC | KP1-10 ¹⁾ | 1SFA 616 100 R100 ■ | 0.016 |
| Pushbutton with extended button Momentary Contact blocks and holder: 1 NO 1 NC 1 NO +1 NC 2 NO 2 NC | KP3-10 ¹⁾ | 1SFA 616 102 R100 ■ | 0.016 |
| Double pushbutton Green upper button, Red Lower button No text Contact blocks and holder: 1 NO +1 NC 2 NO 2 NC | KPD1-10 ■ | 1SFA 616 130 R100 ■ | 0.025 |
| Double pushbutton Green upper button, Red Lower button Text: I/O Contact blocks and holder: 1 NO +1 NC 2 NO 2 NC | KPD2-10 ■ | 1SFA 616 131 R100 ■ | 0.025 |
| Mushroom pushbutton (red, yellow or black) Momentary Contact blocks and holder: 1 NO 1 NC 1 NO +1 NC 2 NO 2 NC | KPM1-10 ■ | 1SFA 616 124 R100 ■ | 0.039 |
| Contact blocks and holder: 1 NO 1 NC 1 NO +1 NC 2 NO 2 NC | KCBH-10 KCBH-01 KCBH-11 KCBH-20 KCBH-02 | 1SFA 616 600 R1101 1SFA 616 600 R1110 1SFA 616 600 R1111 1SFA 616 600 R1102 1SFA 616 600 R1120 | 0.019 0.019 0.032 0.032 0.032 |

¹⁾For bezel in metal replace '1' in the Type KPX-1 0X with the figure '3'

Color code

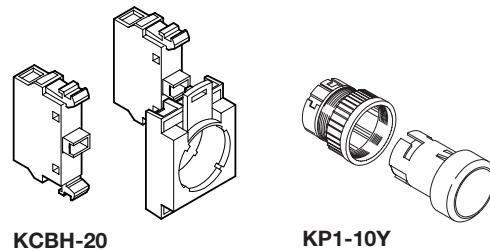
| Color code | Type | Order Code |
|---------------------|----------|---------------------|
| | KPX-10 ■ | 1SFA 616 1XX R100 ■ |
| Red | R | 1 |
| Green | G | 2 |
| Yellow | Y | 3 |
| Blue | L | 4 |
| White | W | 5 |
| Black | B | 6 |
| Clear ¹⁾ | C | 8 |

¹⁾For use with text cap.

Ordering example

Requested: A non-illuminated pushbutton with flush yellow button and two NO contacts

Order: 1 pc of each: **KP1-10Y**
KCBH-20



KCBH-20

KP1-10Y

Pushbuttons – Modular range

Illuminated



| Designation, design and function | Type | Order Code | Weight, kg |
|---|-----------------------|--------------------|------------|
| Pushbutton with flush button Momentary Contact blocks, lamp block and holder: 1 NO +1 LB ¹⁾ 1 NC +1 LB ¹⁾ 1 NO +1 NC +1 LB ¹⁾ 2 NO +1 LB ¹⁾ 2 NC +1 LB ¹⁾ | KP1-11■ ²⁾ | 1SFA 616 100 R110■ | 0.016 |
| Pushbutton with extended button Momentary Contact blocks, lamp block and holder: 1 NO +1 LB ¹⁾ 1 NC +1 LB ¹⁾ 1 NO +1 NC +1 LB ¹⁾ 2 NO +1 LB ¹⁾ 2 NC +1 LB ¹⁾ | KP3-11■ ²⁾ | 1SFA 616 102 R110■ | 0.016 |
| Double pushbutton Green upper button, Red Lower button No text Contact blocks, lamp block and holder: 1 NO +1 NC +1 LB ¹⁾ 2 NO +1 LB ¹⁾ 2 NC +1 LB ¹⁾ | KPD1-11■ | 1SFA 616 130 R110■ | 0.025 |
| Double pushbutton Green upper button, Red Lower button Text: I/O Contact blocks, lamp block and holder: 1 NO + 1 NC +1 LB ¹⁾ 2 NO +1 LB ¹⁾ 2 NC +1 LB ¹⁾ | KPD2-11■ | 1SFA 616 131 R110■ | 0.025 |
| Mushroom pushbutton (red, yellow or black) Momentary Contact blocks, lamp block and holder: 1 NO +1 LB ¹⁾ 1 NC +1 LB ¹⁾ 1 NO +1 NC +1 LB ¹⁾ 2 NO +1 LB ¹⁾ 2 NC +1 LB ¹⁾ | KPM1-11■ | 1SFA 616 124 R110■ | 0.039 |
| | KCBH-101 | 1SFA 616 600 R1201 | 0.034 |
| | KCBH-011 | 1SFA 616 600 R1210 | 0.034 |
| | KCBH-111 | 1SFA 616 600 R1211 | 0.047 |
| | KCBH-201 | 1SFA 616 600 R1202 | 0.047 |
| | KCBH-021 | 1SFA 616 600 R1220 | 0.047 |

¹⁾ LB (max 230 V AC/DC)

²⁾ For bezel in metal replace '1' in the Type KPX-1 1X with the figure '3'.

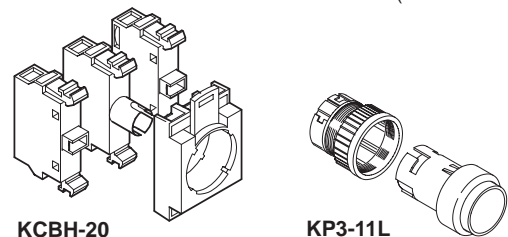
| Color code | Type | Order Code |
|---------------------|----------|--------------------|
| | KPXX-11■ | 1SFA 616 1XX R110■ |
| | ■ | ■ |
| Red | R | 1 |
| Green | G | 2 |
| Yellow | Y | 3 |
| Blue | L | 4 |
| White | W | 5 |
| Clear ¹⁾ | C | 8 |

¹⁾ For use with text cap.

Ordering example

Requested: An illuminated pushbutton with extended blue button and two NO contacts.

Order: 1 pc of each: **KP3-11L**
KCBH-201
Filament bulb or LED (See accessories)



Selector switches – Modular range

Non-illuminated Illuminated

| | NO NC | Designation, design and function | Type | Order Code | Weight, kg |
|--|-------|--|--------------------------------|----------------------------|------------|
| | | Selector switch, short handle. Two position Maintained | K2SS1-10 ²⁾ | 1SFA 616 200 R100 ■ | 0.024 |
| | | Contact blocks and holder: | | | |
| | | 1 NO | KCBH-10 | 1SFA 616 600 R1101 | 0.019 |
| | | 1 NC | KCBH-01 | 1SFA 616 600 R1110 | 0.019 |
| | | 1 NO +1 NC | KCBH-11 | 1SFA 616 600 R1111 | 0.032 |
| | | 2 NO | KCBH-20 | 1SFA 616 600 R1102 | 0.032 |
| | | 2 NC | KCBH-02 | 1SFA 616 600 R1120 | 0.032 |
| | | Selector switch, short handle. Three position Maintained | K3SS1-10 ²⁾ | 1SFA 616 210 R100 ■ | 0.024 |
| | | Contact blocks and holder: | | | |
| | | 1 NO | KCBH-10 | 1SFA 616 600 R1101 | |
| | | 1 NC | KCBH-01 | 1SFA 616 600 R1110 | |
| | | 1 NO +1 NC | KCBH-11 | 1SFA 616 600 R1111 | 0.032 |
| | | 2 NO | KCBH-20 | 1SFA 616 600 R1102 | 0.032 |
| | | 2 NC | KCBH-02 | 1SFA 616 600 R1120 | 0.032 |
| | | Key-operated selector switch. Two position Key removable in both positions | K2SSK1-10 ²⁾ | 1SFA 616 280 R100 ■ | 0.069 |
| | | Contact blocks and holder: | | | |
| | | 1 NO +1 NC | KCBH-11 | 1SFA 616 600 R1111 | 0.032 |
| | | 2 NO | KCBH-20 | 1SFA 616 600 R1102 | 0.032 |
| | | 2 NC | KCBH-02 | 1SFA 616 600 R1120 | 0.032 |
| | | | | | |
| | | Key-operated selector switch. Three position Key removeable in all positions | K3SSK1-10 ²⁾ | 1SFA 616 283 R100 ■ | 0.069 |
| | | Contact blocks and holder: | | | |
| | | 1 NO +1 NC | KCBH-11 | 1SFA 616 600 R1111 | 0.032 |
| | | 2 NO | KCBH-20 | 1SFA 616 600 R1102 | 0.032 |
| | | 2 NC | KCBH-02 | 1SFA 616 600 R1120 | 0.032 |
| | | | | | |
| | | Illuminated selector switch, short handle. Two positions Maintained | K2SS1-10 ²⁾ | 1SFA 616 200 R100 ■ | 0.024 |
| | | Contact blocks, lamp block and holder: | | | |
| | | 1 NO +1 LB ¹⁾ | KCBH-101 | 1SFA 616 600 R1201 | 0.034 |
| | | 1 NC +1 LB ¹⁾ | KCBH-011 | 1SFA 616 600 R1210 | 0.034 |
| | | 1 NO +1 NC +1 LB ¹⁾ | KCBH-111 | 1SFA 616 600 R1211 | 0.047 |
| | | 2 NO +1 LB ¹⁾ | KCBH-201 | 1SFA 616 600 R1202 | 0.047 |
| | | 2 NC +1 LB ¹⁾ | KCBH-021 | 1SFA 616 600 R1220 | 0.047 |
| | | Illuminated selector switch, short handle. Three positions Maintained | K3SS1-10 ²⁾ | 1SFA 616 210 R100 ■ | 0.024 |
| | | Contact blocks, lamp block and holder: | | | |
| | | 1 NO +1 LB ¹⁾ | KCBH-101 | 1SFA 616 600 R1201 | 0.034 |
| | | 1 NC +1 LB ¹⁾ | KCBH-011 | 1SFA 616 600 R1210 | 0.034 |
| | | 1 NO +1 NC +1 LB ¹⁾ | KCBH-111 | 1SFA 616 600 R1211 | 0.047 |
| | | 2 NO +1 LB ¹⁾ | KCBH-201 | 1SFA 616 600 R1202 | 0.047 |
| | | 2 NC +1 LB ¹⁾ | KCBH-021 | 1SFA 616 600 R1220 | 0.047 |

¹⁾ LB (max 230 V AC/DC)

²⁾ For bezel in metal replace '1' in the Type KXSSX1-1 0X with the figure '3'.

Ordering example – see page 7

Codes for non-illuminated selector switches

Color code

| | Type | Order Code |
|-------|------------|---------------------|
| | KXXXX-10 ■ | 1SFA 616 XXX R100 ■ |
| Black | B | 6 |
| Red | R | 1 |
| Grey | U | 7 |

Key code

| | Type | Order Code |
|----|-------------|---------------------|
| | KXSSK1-10 ■ | 1SFA 616 XXX R100 ■ |
| 71 | 1 | 1 |
| 72 | 2 | 2 |
| 73 | 3 | 3 |

Codes for illuminated selector switches

Color code

| | Type | Order Code |
|--------|-----------|---------------------|
| | KXXX-11 ■ | 1SFA 616 1XX R110 ■ |
| Red | R | 1 |
| Green | G | 2 |
| Yellow | Y | 3 |
| Blue | L | 4 |
| White | W | 5 |
| Clear | C | 8 |

Emergency stop pushbuttons – Modular range

Non-illuminated Illuminated



| Designation, design and function | Type | Order Code | Weight, kg |
|--|---|---|------------|
| Emergency stop pushbutton, 40 mm (only red) Twist release Contact blocks and safety holder ¹⁾: 1 NO 1 NC 1 NO +1 NC 2 NO 2 NC | KPMT3-10 ■ KCBHS-10 KCBHS-01 KCBHS-11 KCBHS-20 KCBHS-02 | 1SFA 616 510 R100 ■ 1SFA 616 605 R1101 1SFA 616 605 R1110 1SFA 616 605 R1111 1SFA 616 605 R1102 1SFA 616 605 R1120 | 0.041 |
| Emergency stop pushbutton, 40 mm (only red) Pull release Contact blocks and safety holder ¹⁾: 1 NO 1 NC 1 NO +1 NC 2 NO 2 NC | KPMP3-10 ■ KCBHS-10 KCBHS-01 KCBHS-11 KCBHS-20 KCBHS-02 | 1SFA 616 511 R100 ■ 1SFA 616 605 R1101 1SFA 616 605 R1110 1SFA 616 605 R1111 1SFA 616 605 R1102 1SFA 616 605 R1120 | 0.041 |
| Illuminated emergency stop pushbutton, 40 mm (only red) Twist release Contact blocks, lamp block and safety holder ¹⁾: 1 NO +1 LB 1 NC +1 LB 1 NO +1 NC +1 LB 2 NO +1 LB 2 NC +1 LB | KPMT3-11 ■ KCBHS-101 KCBHS-011 KCBHS-111 KCBHS-201 KCBHS-021 | 1SFA 616 510 R110 ■ 1SFA 616 605 R1201 1SFA 616 605 R1210 1SFA 616 605 R1211 1SFA 616 605 R1202 1SFA 616 605 R1220 | 0.041 |
| Illuminated emergency stop pushbutton, 40 mm (only red) Pull release Contact blocks, lamp block and safety holder ¹⁾: 1 NO +1 LB 1 NC +1 LB 1 NO +1 NC +1 LB 2 NO +1 LB 2 NC +1 LB | KPMP3-11 ■ KCBHS-101 KCBHS-011 KCBHS-111 KCBHS-201 KCBHS-021 | 1SFA 616 511 R110 ■ 1SFA 616 605 R1201 1SFA 616 605 R1210 1SFA 616 605 R1211 1SFA 616 605 R1202 1SFA 616 605 R1220 | 0.041 |

¹⁾ The safety holder can only be used for the above mentioned emergency stop pushbutton.

Modular range

Ordering example – Selector switch

Requested: An illuminated 2-position selector switch with blue handle and two NO contact.

Order: 1 pc of each: **K2SS1-11L**
KCBH-101
Filament bulb or LED (See accessories)

Ordering example – Emergency stop pushbutton

Requested: A non-illuminated emergency pushbutton, twist release, with two NO contacts.

Order: 1 pc of each: **KPMT3-10R**
KCBHS-20

Pilot light, buzzer and potentiometer

– Modular range



| Designation, design and function | Type | Order Code | Weight, kg |
|---|-----------------|---------------------------|------------|
| Pilot light head | KL1-100■ | 1SFA 616 400 R100■ | 0.018 |
| Lamp block and holder: For 2 W, max. 230 V AC and DC | KCBH-001 | 1SFA 616 600 R1200 | 0.021 |
| 115 V AC supply voltage. For 60 V filament bulb max. 1.2 W | KCBH-002 | 1SFA 616 600 R1300 | 0.023 |
| 230 V AC supply voltage. For 130 V filament bulb max. 2 W | KCBH-003 | 1SFA 616 600 R1400 | 0.026 |
| For a softer light output and 180 degrees smooth light distribution use Text cap with or without text. Text cap without text | | 1SFA 616 903 R9001 | |
| For increased visibility from far distance use a Light diffusing lens Light diffusing lens | | 1SFA 616 920 R8005 | |

| Designation, design and function | Type | Order Code | Weight, kg |
|--|---|---|-------------------------|
| Buzzer Frequency: 2400 Hz. Rated current: ≤8 mA Loudness: Min. 80 dB(A)/10 cm <i>Continuous tone type:</i> 24 V AC/DC 115V AC/DC 230 V AC/DC | KB1-4010 KB1-4030 KB1-4040 | 1SFA 616 401 R4010 1SFA 616 401 R4030 1SFA 616 401 R4040 | 0.020 0.020 0.020 |
| <i>Pulsating tone type:</i> 24 V AC/DC 115V AC/DC 230 V AC/DC | KB1-4110 KB1-4130 KB1-4140 | 1SFA 616 401 R4110 1SFA 616 401 R4130 1SFA 616 401 R4140 | 0.020 0.020 0.024 |
| Potentiometer/Resistor Black knob with integrated position indication and marking in white 5 kohm 10 kohm | KT-105B KT- 110B | 1SFA 616 410 R1056 1SFA 616 410 R1106 | 0.034 0.034 |
| Operating knob - without resistor Black knob with integrated position indication and marking in white. For shaft diameter 6 - 6.35 mm. Min. shaft length 20 mm | KT-100B | 1SFA 616 410 R1006 | 0.023 |

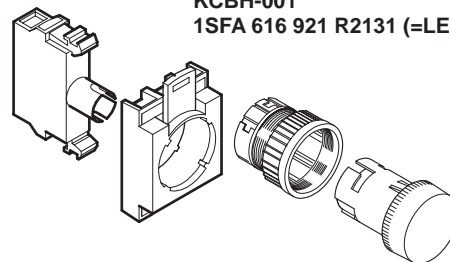
Color code for the pilot light head

| | Type | Order Code |
|--------|----------|--------------------|
| | KXXX-11■ | 1SFA 616 1XX R110■ |
| Red | R | 1 |
| Green | G | 2 |
| Yellow | Y | 3 |
| Blue | L | 4 |
| White | W | 5 |
| Clear | C | 8 |

Ordering example

Requested: A red pilot light with a red LED.
Supply voltage 115 V AC

Order: 1 pc of each: **KL1-100R**
KCBH-001
1SFA 616 921 R2131 (=LED)



Assembled stations with modular range pilot devices



Non-metallic enclosures

| Included contact blocks | | | | Order Code | Weight, kg |
|-------------------------------------|-------------------|------------------|--|---------------------------|------------|
| NC | Legend plate text | Button/cap color | | | |
| 1-seat Grey top/black bottom | | | | | |
| One pushbutton. Momentary | | | | | |
| 1 | I | Green | | 1SFA 616 811 R1001 | 0.196 |

| Included contact blocks | | | | Order Code | Weight, kg |
|--|----|-------------------|------------------|---------------------------|------------|
| NC | NO | Legend plate text | Button/cap color | | |
| 1-seat Yellow top/black bottom | | | | | |
| 40 mm emergency stop button. Twist release | | | | | |
| 2 | – | | Red | 1SFA 616 821 R1005 | 0.234 |
| 2 | 1 | | Red | 1SFA 616 821 R1024 | 0.246 |

| Included contact blocks | | | | Order Code | Weight, kg |
|-------------------------------------|----|-------------------|-------|---------------------------|------------|
| NC | NO | Legend plate text | | | |
| | | Left | Right | Left | Right |
| 2-seat Grey top/black bottom | | | | | |
| Two pushbuttons. Momentary. | | | | | |
| 1 | 1 | O | I | Red | Green |
| | | | | 1SFA 616 812 R1001 | 0.272 |

| Included contact blocks | | | | Order Code | Weight, kg | | |
|--|----|-------------------|--------|---------------------------|------------|------------------|-------|
| NC | NO | Legend plate text | | | | Button/cap color | |
| | | Left | Centre | Right | Left | Centre | Right |
| 3-seat Grey top/black bottom | | | | | | | |
| Two pushbuttons. Momentary. Pilot light in centre position | | | | | | | |
| 1 | 1 | O | I | I | Red | Clear | Green |
| | | | | 1SFA 616 813 R1001 | 0.346 | | |

Metallic enclosures

| Included contact blocks | | | | Order Code | Weight, kg |
|--|-------------------|------------------|--|---------------------------|------------|
| NO | Legend plate text | Button/cap color | | | |
| 1-seat Grey | | | | | |
| One pushbutton. Momentary. Degree of protection IP 66. | | | | | |
| 1 | I | Green | | 1SFA 616 831 R1001 | 0.380 |

| Included contact blocks | | | | Order Code | Weight, kg |
|--|-------------------|------------------|--|---------------------------|------------|
| NC | Legend plate text | Button/cap color | | | |
| 1-seat Grey | | | | | |
| 40 mm emergency stop button. Maintained. Pull release. Degree of protection IP 54. | | | | | |
| 1 | Emergency stop | Red | | 1SFA 616 831 R1018 | 0.406 |

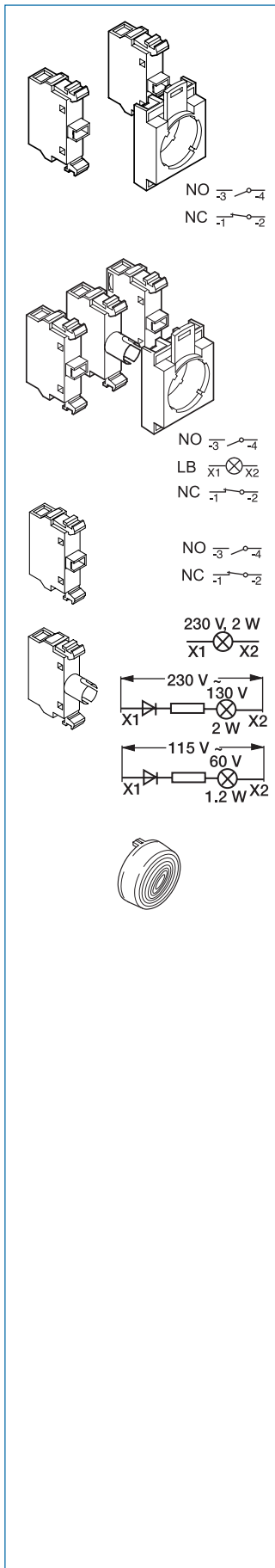
Non-metallic enclosures with Field Bus Interface

| Description | Type | Order Code | Weight, kg |
|---|------------|--------------------------|------------|
| 1-seat Grey top/black bottom Emergency stop pushbutton | KEPN1-5001 | 1SFA616 841 R5001 | 0.256 |
| 2-seat Grey top/black bottom Two pushbuttons (On/OFF) | KEPN2-5001 | 1SFA616 842 R5001 | 0.332 |
| 3-seat Grey top/black bottom Two pushbuttons (On/OFF) and one pilot light | KEPN3-5001 | 1SFA616 843 R5001 | 0.394 |

Modular range

Pilot devices, Ø 22 mm – Accessories

Ordering



| Max number of blocks in holder | Included blocks | Type | Order Code | Weight, kg |
|---|---------------------|--------------------|--------------------|------------|
| Contact blocks and lamp block with holder | | | | |
| For front mounting | | | | |
| For non-illuminated operators | | | | |
| 3 | 1 NC | KCBH-01 | 1SFA 616 600 R1110 | 0.019 |
| 3 | 1 NO | KCBH-10 | 1SFA 616 600 R1101 | 0.019 |
| 3 | 2 NC | KCBH-02 | 1SFA 616 600 R1120 | 0.032 |
| 3 | 2 NO | KCBH-20 | 1SFA 616 600 R1102 | 0.032 |
| 3 | 3 NC | KCBH-03 | 1SFA 616 600 R1130 | 0.045 |
| 3 | 3 NO | KCBH-30 | 1SFA 616 600 R1103 | 0.045 |
| 3 | 1 NC +1 NO | KCBH-11 | 1SFA 616 600 R1111 | 0.032 |
| 3 | 2 NC +1 NO | KCBH-12 | 1SFA 616 600 R1121 | 0.045 |
| 3 | 1 NC +2 NO | KCBH-21 | 1SFA 616 600 R1112 | 0.045 |
| For illuminated operators | | | | |
| 3 | 1 NC +1 LB | KCBH-011 | 1SFA 616 600 R1210 | 0.034 |
| 3 | 1 NO +1 LB | KCBH-101 | 1SFA 616 600 R1201 | 0.034 |
| 3 | 1 NC +1 NO +1 LB | KCBH-111 | 1SFA 616 600 R1211 | 0.047 |
| 3 | 2 NC +1 LB | KCBH-021 | 1SFA 616 600 R1220 | 0.047 |
| 3 | 2 NO +1 LB | KCBH-201 | 1SFA 616 600 R1202 | 0.047 |
| Description | Type | Order Code | Weight, kg | |
| Single contact blocks | | | | |
| 1 NO contact block | KCB-10 | SK 616 001-A | 0.013 | |
| 1 NC contact block | KCB-01 | SK 616 001-B | 0.013 | |
| Single lamp blocks | | | | |
| For 2 W, max. 230 V AC and DC bulb, neon bulb or LED. | KLB-1 | SK 616 003-A | 0.015 | |
| 230 V AC supply voltage. | KLB-3 | SK 616 003-C | 0.020 | |
| For 130 V filament bulb max. 2 W. | | | | |
| 115 V AC and DC supply voltage. | KLB-4 | SK 616 003-G | 0.017 | |
| For 24 V LED | | | | |
| Light diffusing lens - Accessory for pilot light | | | | |
| The lens is used instead of text cap. | | 1SFA 616 920 R8005 | 0.005 | |

Pilot devices, Ø 22 mm – Accessories

Ordering



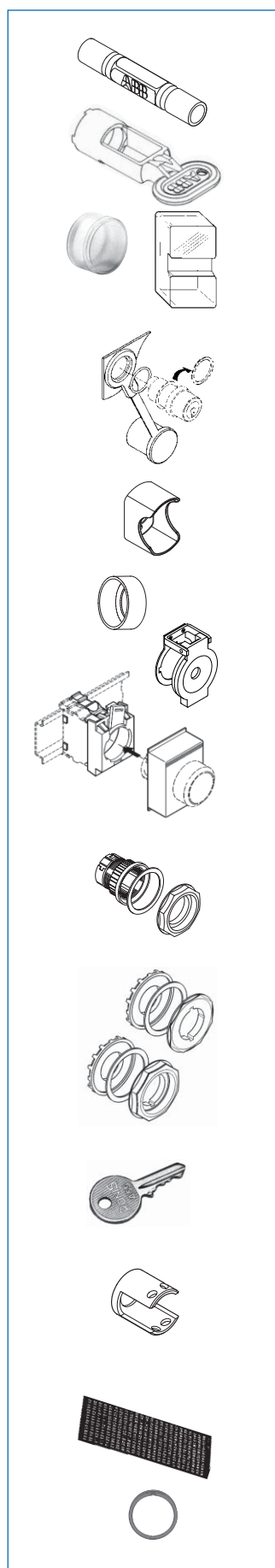
| Description | | | | | Type | Order Code | Weight, kg |
|--|---------------------|-------------------|-------------------|------------------|----------|--------------------|------------|
| Filament bulbs Ba 9s base | | | | | | | |
| Type of current: AC/DC. | | | | | | | |
| Rated voltage V | Rated current mA | Rated output W | Service life h | | | | |
| 6 | 200 | 1.2 | 10 000 | | KA2-1008 | 1SFA 616 921 R1008 | 0.002 |
| 12 | 100 | 1.2 | 10 000 | | KA2-1018 | 1SFA 616 921 R1018 | 0.002 |
| 24 | 50 | 1.2 | 10 000 | | KA2-1028 | 1SFA 616 921 R1028 | 0.002 |
| 30 | 40 | 1.2 | 10 000 | | KA2-1038 | 1SFA 616 921 R1038 | 0.002 |
| 48 | 42 | 2 | 6 000 | | KA2-1048 | 1SFA 616 921 R1048 | 0.002 |
| 60 | 20 | 1.2 | 5 000 | | KA2-1058 | 1SFA 616 921 R1058 | 0.002 |
| 110 | 18 | 2 | 7 500 | | KA2-1108 | 1SFA 616 921 R1108 | 0.002 |
| 130 | 15 | 2 | 7 500 | | KA2-1128 | 1SFA 616 921 R1128 | 0.002 |
| LEDs | | | | | | | |
| With one diode chip mounted on a Ba 9s base. | | | | | | | |
| Choose the same color for the LED and the lamp cap or else use a clear lamp cap. | | | | | | | |
| For white light use white LED with clear lamp cap. | | | | | | | |
| At DC the lamp base have to be connected to cathode (-) and the bottom contact to anode (+). | | | | | | | |
| Rated voltage V | Rated current mA | Color | Wave-length nm | Luminance mcd | | | |
| Type of current: DC Service life >50 000 h | | | | | | | |
| 12 | 15 | Red | 630 | 250 | | 1SFA 616 921 R2011 | 0.005 |
| 12 | 15 | Green | 525 | 800 | | 1SFA 616 921 R2012 | 0.005 |
| 12 | 15 | Yellow | 592 | 250 | | 1SFA 616 921 R2013 | 0.005 |
| 12 | 15 | Blue | 470 | 400 | | 1SFA 616 921 R2014 | 0.005 |
| 12 | 15 | White | x=0.31 y=3.2 | 500 | | 1SFA 616 921 R2015 | 0.005 |
| Type of current: (AC)/DC ¹⁾ Service life >50 000 h | | | | | | | |
| 24 | 15 | Red | 630 | 250 | | 1SFA 616 921 R2021 | 0.005 |
| 24 | 15 | Green | 525 | 800 | | 1SFA 616 921 R2022 | 0.005 |
| 24 | 15 | Yellow | 592 | 250 | | 1SFA 616 921 R2023 | 0.005 |
| 24 | 15 | Blue | 470 | 400 | | 1SFA 616 921 R2024 | 0.005 |
| 24 | 15 | White | x=0.31 y=3.2 | 500 | | 1SFA 616 921 R2025 | 0.005 |
| Type of current: (AC)/DC ¹⁾ Service life >50 000 h | | | | | | | |
| 48 | 12 | Red | 630 | 200 | | 1SFA 616 921 R2041 | 0.005 |
| 48 | 12 | Green | 525 | 640 | | 1SFA 616 921 R2042 | 0.005 |
| 48 | 12 | Yellow | 592 | 200 | | 1SFA 616 921 R2043 | 0.005 |
| 48 | 12 | Blue | 470 | 320 | | 1SFA 616 921 R2044 | 0.005 |
| 48 | 12 | White | x=0.31 y=3.2 | 400 | | 1SFA 616 921 R2045 | 0.005 |
| Type of current: (AC)/DC ¹⁾ Service life >50 000 h | | | | | | | |
| 60 | 10 | Red | 630 | 160 | | 1SFA 616 921 R2051 | 0.005 |
| 60 | 10 | Green | 525 | 530 | | 1SFA 616 921 R2052 | 0.005 |
| 60 | 10 | Yellow | 592 | 160 | | 1SFA 616 921 R2053 | 0.005 |
| 60 | 10 | Blue | 470 | 260 | | 1SFA 616 921 R2054 | 0.005 |
| 60 | 10 | White | x=0.31 y=3.2 | 330 | | 1SFA 616 921 R2055 | 0.005 |
| Type of current: AC ¹⁾ Service life 25 000 h | | | | | | | |
| 110-130 | 4-6 | Red | 630 | 25-35 | | 1SFA 616 921 R2131 | 0.005 |
| 110-130 | 4-6 | Green | 525 | 300-350 | | 1SFA 616 921 R2132 | 0.005 |
| 110-130 | 4-6 | Yellow | 592 | 60-90 | | 1SFA 616 921 R2133 | 0.005 |
| 110-130 | 4-6 | Blue | 470 | 130-150 | | 1SFA 616 921 R2134 | 0.005 |
| 110-130 | 4-6 | White | x=0.31 y=3.2 | 160-200 | | 1SFA 616 921 R2135 | 0.005 |
| Type of current: AC/DC ¹⁾ Service life 25 000 h | | | | | | | |
| 110-130 | 4-6 | Red | 630 | 25-35 | | 1SFA 616 921 R2141 | 0.005 |
| 110-130 | 4-6 | Green | 525 | 300-350 | | 1SFA 616 921 R2142 | 0.005 |
| 110-130 | 4-6 | Yellow | 592 | 60-90 | | 1SFA 616 921 R2143 | 0.005 |
| 110-130 | 4-6 | Blue | 470 | 130-150 | | 1SFA 616 921 R2144 | 0.005 |
| 110-130 | 4-6 | White | x=0.31 y=3.2 | 160-200 | | 1SFA 616 921 R2145 | 0.005 |
| Type of current: AC ¹⁾ Service life 25 000 h | | | | | | | |
| 230 | 4 | Red | 630 | 25 | | 1SFA 616 921 R2221 | 0.005 |
| 230 | 4 | Green | 525 | 300 | | 1SFA 616 921 R2222 | 0.005 |
| 230 | 4 | Yellow | 592 | 60 | | 1SFA 616 921 R2223 | 0.005 |
| 230 | 4 | Blue | 470 | 130 | | 1SFA 616 921 R2224 | 0.005 |
| 230 | 4 | White | x=0.31 y=3.2 | 160 | | 1SFA 616 921 R2225 | 0.005 |

¹⁾ At AC the luminance is decreased with 30 % and there is also a slight flickering.

Note: LEDs for other voltages, please contact your nearest ABB sales office

Pilot devices, Ø 22 mm – Accessories

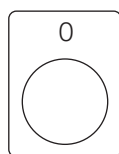
Ordering



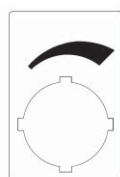
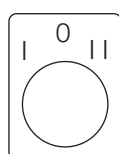
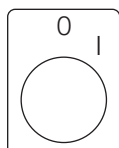
| Description | Type | Order Code | Weight. kg |
|---|------------------------|--|-------------------------|
| Lamp changing tool For LED and for bulbs. | KA1-8072 | 1SFA 616 920 R8072 | 0.002 |
| Mounting tool Used for tightening the nut of the attachment device in confined spaces. | | 1SFA 616 920 R8015 | 0.021 |
| Membrane of silicone Of transparent, heat and cold resistant silicon rubber. Does not harden at low temperature. Gives IP 67 degree of protection. When membrane is used, remove the gasket. For operator with: Flush button Extended button Double pushbutton (only modular range) | | 1SFA 616 920 R8052 1SFA 616 920 R8002 SK 616 503-4 | 0.002 0.002 0.002 |
| Sealing shroud For key-operated selector switches | KA1-8036 | 1SFA 616 920 R8036 | 0.020 |
| Emergency stop shroud Yellow Emergency stop shroud for 40 mm Emergency stop pushbuttons. Prevents accidental activation of the Emergency stop pushbutton. | KA1-8053 | 1SFA 616 920 R8053 | 0.040 |
| Protective ring To prevent inadvertant operation. Not together with legend plate holder. | | SK 615 512-1 | 0.002 |
| Protective cover For flush button. To prevent inadvertant operation. Not together with legend plate holder. | | 1SFA 616 920 R8010 | 0.008 |
| Mounting kit for DIN-rail To be used only with pushbuttons and pilot lights | | 1SFA 616 920 R8001 | 0.025 |
| 30 mm adaptors (Legend plates for 30 mm by request) For use when fitting the 22 mm pushbutton range in 30 mm mounting holes. (1.5–4 mm panels) | | | |
| For use with 22 mm Pushbuttons, Switches and Pilot Lights | Black plastic Metal | 1SFA 616 920 R8003 1SFA 616 920 R8004 | 0.012 0.037 |
| For use with 22 mm Emergency Stop | Black plastic Metal | 1SFA 616 920 R8027 1SFA 616 920 R8028 | 0.007 0.021 |
| For use with 22 mm Potentiometer, Compact Pilot Light and Buzzer | Black plastic Metal | 1SFA 616 920 R8029 1SFA 616 920 R8030 | 0.010 0.035 |
| Extra key Ronis 455 (Key code 71) Ronis 421 (Key code 72) Ronis 3433-E (Key code 73) | | SK 616 021-71 SK 616 021-72 SK 616 021-73 | 0.007 0.007 0.007 |
| Lock shackle for mushroom button with 30 mm button, twist release Cannot be used in ABB non-metallic enclosure. For 30 mm diameter mushroom button, twist release. Lockable with 4 padlocks when button is in the depressed position. Max. lock yoke diameter 7 mm. | | SK 615 502-D | 0.080 |
| Label sheet For marking of contact blocks at two levels. | | 2949 1725-1 | 0.001 |
| Guide washer To improve antirotation | | 2154 373-2 | 0.001 |

Pilot devices, Ø 22 mm – Accessories

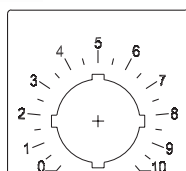
Ordering



H=39 mm W=29,6 mm



Symbol plate
29.6 x 44.5 mm



Width 48.5 mm
Height 44.5 mm

| Description | Order Code | Weight, kg |
|-------------|------------|------------|
|-------------|------------|------------|

Legend plates

Engraved fixed plates with of silver-grey aluminium. Black text

| Symbol/text | Order Code | Weight, kg |
|-------------|------------|------------|
|-------------|------------|------------|

For pushbutton

| | | |
|-------|----------------------|-------|
| O | SK 615 550-61 | 0.002 |
| Start | SK 615 550-44 | 0.002 |
| Stop | SK 615 552-31 | 0.002 |

| Symbol/text | Order Code | Weight, kg |
|-------------|------------|------------|
|-------------|------------|------------|

For two-position selector switch

| | | |
|------------|----------------------|-------|
| O I | SK 615 550-75 | 0.002 |
| Stop Start | SK 615 552-55 | 0.002 |

| Symbol/text | Order Code | Weight, kg |
|-------------|------------|------------|
|-------------|------------|------------|

For three-position selector switch

| | | |
|---------------|----------------------|-------|
| I O II | SK 615 550-81 | 0.002 |
| Hand O Auto | SK 615 550-80 | 0.002 |
| Slow Off Fast | SK 615 552-60 | 0.002 |

Emergency stop legend plate

Engraved plate of aluminium, yellow with black text.
Quantity per package: 10.

| Text | Order Code | Weight, kg |
|------|------------|------------|
|------|------------|------------|

| | | |
|--------------------------------|----------------------|-------|
| Nöd Stopp | SK 615 546-1 | 0.010 |
| Emergency Stop | SK 615 546-2 | 0.010 |
| Not Aus | SK 615 546-3 | 0.010 |
| ARRET D'URGENCE | SK 615 546-4 | 0.010 |
| HÄTÄSEIS | SK 615 546-5 | 0.010 |
| PARADA DE EMERGENCIA | SK 615 546-6 | 0.010 |
| EMERGENCY STOP | | |
| NOT AUS | | |
| ARRET D'URGENCE | SK 615 546-13 | 0.010 |
| (In Russian, Cyrillic letters) | SK 615 546-17 | 0.010 |

Legend plate for potentiometer

Engraved plate of aluminium.
29.6 x 44.5 mm

| Text | Order Code | Weight, kg |
|------|------------|------------|
|------|------------|------------|

| | | |
|--------------|----------------------|-------|
| Symbol plate | SK 615 562-87 | 0.002 |
|--------------|----------------------|-------|

| | | |
|--------------|----------------------|-------|
| Scale 0 - 10 | SK 615 562-88 | 0.002 |
|--------------|----------------------|-------|

Pilot devices, Ø 22 mm

Technical data

General

Standards

IEC 73, 529, 947-5-1,
EN 50 013, 60 947-5-1, 947-5-5
UL 508
CSA C22.2 No. 14
For detailed information please contact ABB

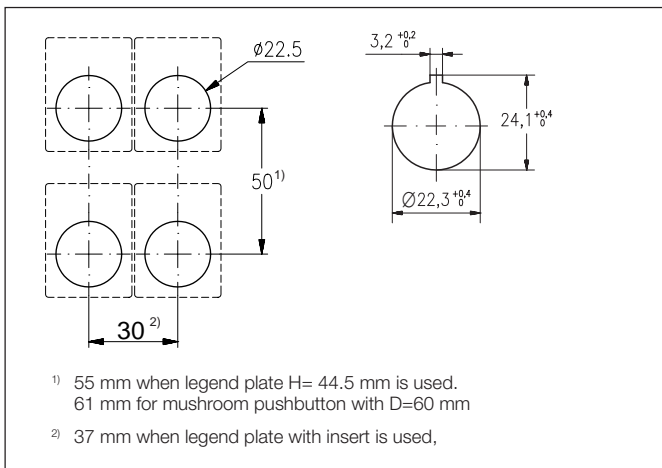
Temperature

Ambient temperature during operation -25 to +70 °C
Exception: All pilot devices with 2 W
continuously lit filament bulb -25 to +40 °C
Storage temperature -30 to +85 °C

Tightening torque

Locking nut, M22 Min. 2 Nm
Max. 2.3 Nm

Drilling plan for pushbuttons, switches and pilot lights



Compact range

Degrees of protection

| Pilot device | IP | UL |
|---|------|----------------------|
| Compact pushbutton, type CP1, CP2, CP3, CP4 | IP66 | 1, 3R, 4, 4X, 12, 13 |
| Compact selector switch, type C2SS, C3SS | IP66 | 1, 3R, 4, 4X, 12, 13 |
| Compact pilot light, type CL | IP66 | 1, 3R, 4, 4X, 12, 13 |
| Electrical functions | IP20 | |

Contacts - Compact Pilot devices

Ratings as per UL, CSA, NEMA C300, R300

| | |
|---------------------------|--------|
| Rated insulation voltage | 250 V |
| Rated thermal current | 2.5 A |
| Rated operational current | |
| at 120 V | 1.5 A |
| 240 V | 0.75 A |

Ratings as per IEC 947-5-1

| | |
|---|-------|
| Rated insulation voltage, U_i | 300 V |
| Rated thermal current, I_{th} | 5 A |
| Rated operational current, I_e utilisation category AC 15 | |
| at 120 V | 1.5 A |
| 240 V | 1 A |
| Rated operational current, I_e utilisation category DC 13, | |
| at 24 V | 0.3 A |
| 125 V | 0.2 A |

Short circuit protection

| | |
|-------------------|-------------------------------|
| Max. fuse at 1 kA | 16 A ordinary 10 A delayed |
|-------------------|-------------------------------|

Max. number of contacts per operator

| | |
|---|------------------------|
| Compact pushbutton, type CP1, CP2, CP3, CP4 | 2 |
| Compact selector switch, type C2SS, C3SS | 2 |
| Compact pilot light, type CL | 1 LB, Ba9s lamp holder |

Tightening torque

| | |
|--------------------------------------|---------------|
| compact pushbutton & selector switch | 0.8 Nm (M3) |
| compact pilot light | 0.9 Nm (M3.5) |

Terminals

| | |
|--------------------------------|---|
| Plus-minus Pozidrive Size 2 | |
| Connectable area | min. 1 x 0.5 mm ² max. 2 x 1.5 mm ² / 2 x AWG14 |
| Connectable area (Pilot Light) | min. 1 x 0.5 mm ² max. 2 x 2.5 mm ² |

Pilot devices, Ø 22 mm

Technical data

Modular range

Degrees of protection

| Operator | IP | UL |
|--|------|----------------------|
| Pushbutton with flush or extended button, type KP1, KP2, KP3, KP4 | IP66 | 1, 3R, 4, 4X, 12, 13 |
| Double pushbutton, type KPD2 | IP54 | 1 |
| Mushroom pushbutton, momentary, type KPM1, KPM2 | IP66 | 1, 3R, 4, 4X, 12, 13 |
| Selector switch, type K2SS, K3SS | IP66 | 1, 3R, 4, 4X, 12, 13 |
| Emergency stop pushbutton type KPMT, KPMP | IP66 | 1, 3R, 4, 4X, 12, 13 |
| Key operated selector switch, type K2SSK, K3SSK | IP54 | 1, 3R, 4, 12 |
| Pilot light, type KL | IP66 | 1, 3R, 4, 4X, 12, 13 |
| Electrical functions | | |
| Contact block and lamp block | IP20 | |
| Enclosures | | |
| Polycarbonate enclosures (Non-metallic) Marked with >PC-GF10< for recycling | IP65 | |
| Light-alloy enclosures (Metallic) (with sealing membrane) | IP67 | |

Contact blocks type KCB

Mechanical endurance 10 million operations

Contacts

Self cleaning contacts of silver, NC contact has forced breaking.
At voltages and currents below 24 V and 5.6 mA two contact blocks in parallel are recommended. As an alternative, gold plated contacts are recommended.

Ratings as per UL, CSA, NEMA A 600, Q600

| | |
|---------------------------|-------|
| Rated insulation voltage | 600 V |
| Rated thermal current | 10 A |
| Rated operational current | |
| at 120 V | 6 A |
| 240 V | 3 A |
| 480 V | 1.5 A |
| 600 V | 1.2 A |

Ratings as per IEC 947-5-1

| | |
|---|--------|
| Rated insulation voltage, U_i | 690 V |
| Rated thermal current, I_{th} | 10 A |
| Rated operational current, I_e utilisation category AC 15, | |
| at 120 V | 8 A |
| 230 V | 6 A |
| 400 V | 4 A |
| 690 V | 2 A |
| Rated operational current, I_e utilisation category DC 13, | |
| at 24 V | 5 A |
| 125 V | 1.1 A |
| 250 V | 0.55 A |

Contact resistance 25 milliohm

Short circuit protection

Max. fuse at 1 kA 16 A ordinary
10 A delayed

Tightening torque 0.9 Nm

Contact blocks type KCB, cont.

Max. number of contact blocks per operator

Contact blocks may be stacked in max. two levels, see below

| Operator | Non-ill. | Illuminated |
|--|------------|------------------|
| Pushbutton with flush or extended button, type KP1, KP2, KP3, KP4 | 6 (Fig. 1) | 4 +1 LB (Fig. 2) |
| Double pushbutton, type KPD2 | 4 (Fig. 3) | 4 +1 LB (Fig. 4) |
| Mushroom pushbutton, momentary, type KPM1, KPM2 | 6 (Fig. 1) | 4 +1 LB (Fig. 2) |
| Selector switch, type K2SS, K3SS | 4 (Fig. 3) | 4 +1 LB (Fig. 4) |
| Emergency stop pushbutton type KPMT, KPMP | 4 (Fig. 5) | 4 +1 LB (Fig. 6) |
| Key operated selector switch, type K2SSK, K3SSK | 4 (Fig. 3) | – (Not possible) |
| Pilot light, type KL | | 1 LB (Fig. 7) |

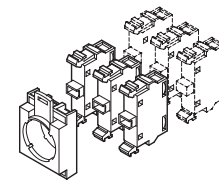


Fig. 1

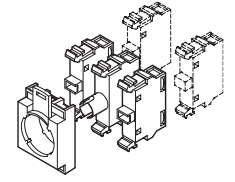


Fig. 2

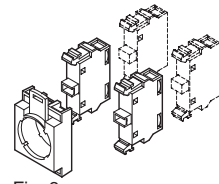


Fig. 3

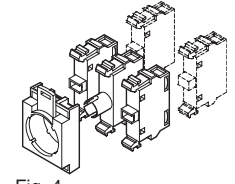


Fig. 4

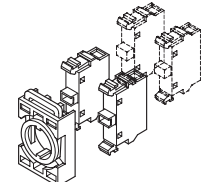


Fig. 5

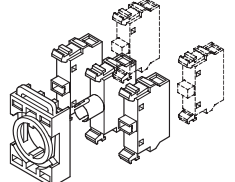


Fig. 6

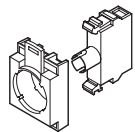


Fig. 7

Lamp blocks type KCB

Ratings as per IEC 947-5-1

| | |
|--------------------------|-------|
| Rated insulation voltage | 230 V |
| Base | Ba 9s |
| Max. permissible power | 2 W |

Service life of filament bulb

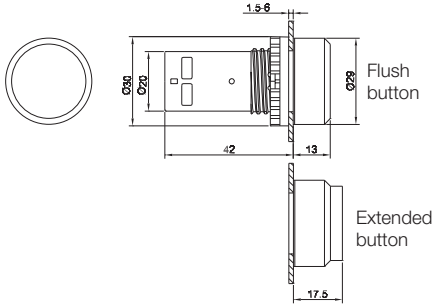
It is generally true to say that bulbs for lower voltages give more light and withstand vibrations better than bulbs for higher voltages.

Pilot devices, Ø 22 mm

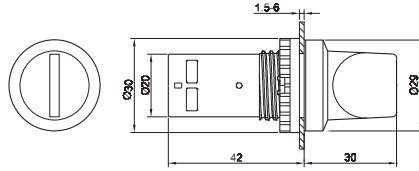
Dimensions

Compact range

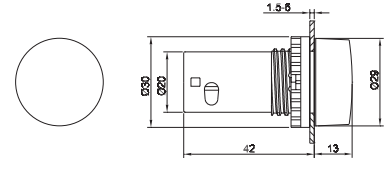
Pilot light



Pushbutton

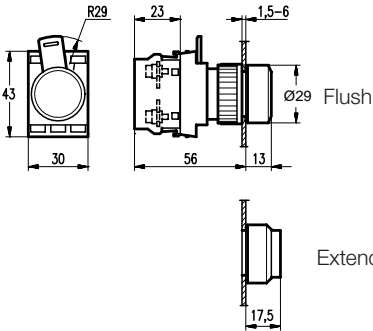


Selector switch

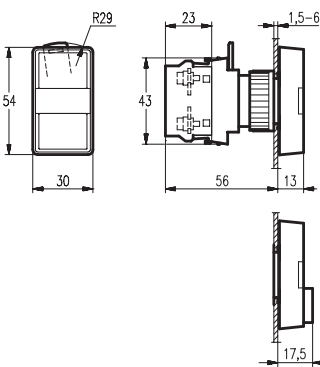


Modular range

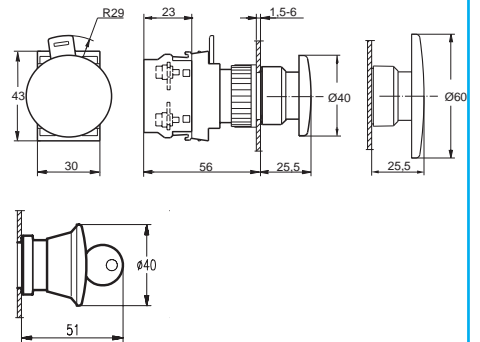
Pushbutton



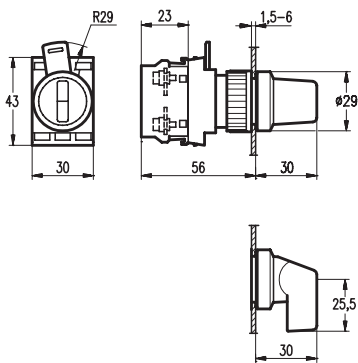
Double pushbutton



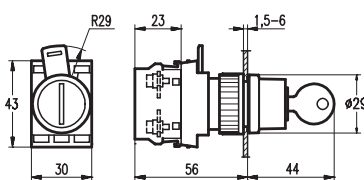
Mushroom pushbutton



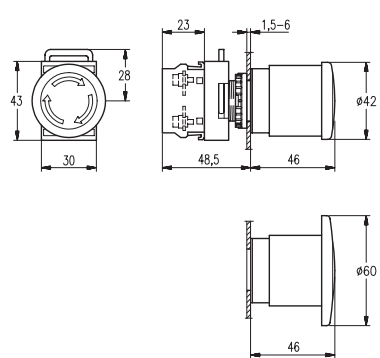
Selector switch



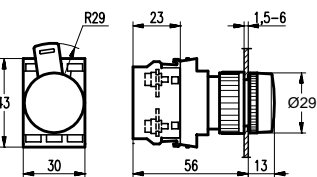
Key-operated selector switch



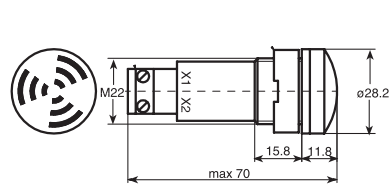
Emergency stop pushbutton



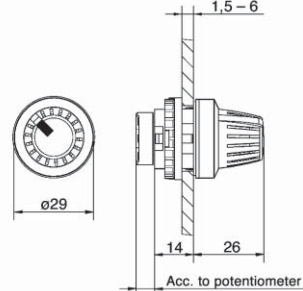
Pilot light



Buzzer



Potentiometer



Dimensions in mm.

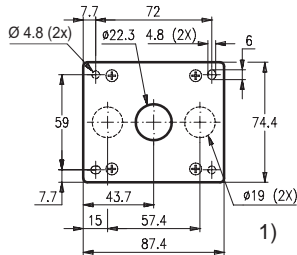
Pilot devices, Ø 22 mm

Dimensions

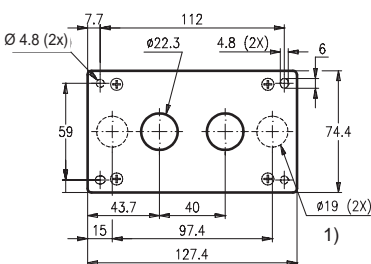
Enclosures, non-metallic

Dimensions in mm.

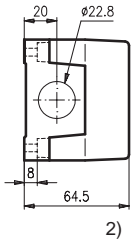
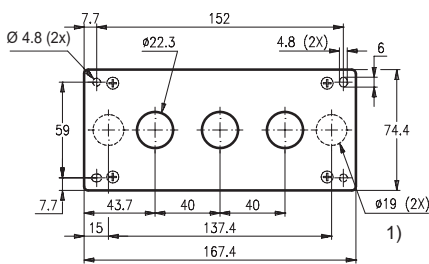
1 seat



2 seats



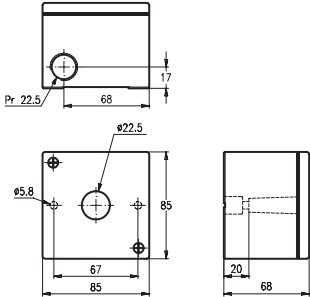
3 seats



- 1) Knock-outs in the bottom
- 2) Both sides identical. Knock-outs, D = 22.5 or 28.6

Enclosures, metallic

1 seat










Pilot devices, Ø 22 mm

Color selection

Color selection according to IEC 73, edition 4, 1991

IEC 73 specifies colors for pushbuttons and pilot lights and gives recommendations regarding the use of colors. An excerpt from the standards is given below.

| Color | Pushbutton/Meaning | Pilot lights/Meaning |
|-----------------------------------|---|-------------------------------|
| RED |  Emergency Measures required in emergency situations | Emergency or danger |
| YELLOW |  Abnormal. Measures required in abnormal situations | Abnormal or warning |
| GREEN |  Safety Measure to normalize or secure the situation | Normal or safety |
| BLUE |  Prescribed | Prescribed or obligatory |
| WHITE, GREY, BLACK |  No special meaning prescribed   | No special meaning prescribed |

Pushbuttons

Emergency, even in combination with **Off**, is to be **RED**.

Stop and **Off** can be white, grey or black, with preference for **BLACK**. Red is also allowed.

Start and **On** can be white, grey or black, with preference for **WHITE**. Green is also allowed.

Start and stop in combination can be white, grey or black. Yellow, green or red must not be used.

Reset is to be blue, white, grey or black, with preference for **BLUE**.

Reset with stop function can be white, grey or black, with preference for **BLACK**. Red is also allowed.

Illuminated pushbuttons

The red color of Emergency must be on the operator itself and is not to be dependent on transmitted light. For other functions, see Pushbuttons. When in doubt, use white (neutral).

Pilot lights

Pilot lights are to be given colors according to the table above. When in doubt, use white (neutral).

Pilot devices, Ø 22 mm

Explanation of type codes

Explanation of type code

Modular Pilot Devices

Pilot light

Example 1: Type **KL1-100R**

L1 Pilot Light Head

Lens color:

R = Red W = White
G = Green C = Clear
Y = Yellow
L = Blue

Operators

Example 2: Type **KP1-10Y**

P Pushbutton
PD Pushbutton, Double
PK Pushbutton, Key-lockable
PM Pushbutton, Mushroom
PMT Pushbutton, Mushroom, Twist release
PMP Pushbutton, Mushroom, Pull release
2SS 2-pos. Selector Switch
3SS 3-pos. Selector Switch
T Potentiometer

Button color:

R = Red W = White
G = Green B = Black (non-illuminated only)
Y = Yellow C = Clear
L = Blue U = Grey (non-illuminated only)

Lens color for double pushbuttons:

R = Red
G = Green
Y = Yellow
C = Clear
B = Black (non-illuminated only)

Example 3: Type **K2SSK1-101**

2SSK 2-pos. Selector Switch, Key-lockable
3SSK 3-pos. Selector Switch, Key-lockable
PK Pushbutton, Key-lockable

Key code :

1 = 71
2 = 72
3 = 73

Buzzer, contact blocks, lamp block

Example 4: Type **KCBH-10**

B Buzzer
CB Contact Block
CBH Contact Block with Holder
LB Lamp Block

Contact blocks:

10 1 NO
01 1 NC
11 1 NO +1 NC
02 2 NO
20 2 NC

K= "Generation" K, Modular range

Compact Pilot Devices

Example 5: Type **CL-100R**

Example 6: Type **C2SS1-10R -10**

L Pilot Light
P Pushbutton
2SS 2-pos. Selector Switch
3SS 3-pos. Selector Switch

Button color/ Lens colour for compact pilot light and pushbuttons

R = Red W = White
G = Green B = Black
Y = Yellow C = Clear (pilot light only)
L = Blue U = Grey

Button color for compact selector switch

R = Red
B = Black
U = Grey

C= Compact Range



Get in touch with the Pilot Devices from ABB

A pushbutton has to be sturdy and reliable, applicable in all environments and adaptable to widely differing requirements. Further, it should be easy to install. You will find all these features in ABB's range of Pilot Devices.



ABB