Pilot devices, 22 mm

Short Form Catalogue

1SFC151002C0201, December 2003, Supersedes 1SFC261009-en of June 2001



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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Modular range

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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 descibed 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

Flush button
Momentary or Maintained

Non-illuminated *(see page 5)*

Extended button
Momentary or Maintained

Non-illuminated *(see page 5*



Selector switches

2-position
Maintained or Momentary

Non-illuminated *(see page 6)*

3-position
Maintained or Momentary

Non-illuminated *(see page 6)*



Pilot light

Illuminated *(see page 7)*



with integrated LED

Illuminated *(see page 7)*

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



Pushbuttons

Flush button
Momentary or Maintained

Non-illuminated *(see page 8)*

Illuminated (see page 9)

Extended button
Momentary or maintained

Non-illuminated *(see page 8)*

Illuminated (see page 9)



Selector switches

2-position
Maintained

Non-illuminated *(see page 10)*

Illuminated (see page 10)

3-position
Maintained

Non-illuminated *(see page 10)*

Illuminated (see page 10)



Key-operated selector switches

2-position
Maintained

Non-illuminated *(see page 10)*

3-position
Maintained

Non-illuminated *(see page 10)*



Pilot light

Illuminated *(see page 12)*



Double pushbuttons

Non-illuminated *(see page 8)*
Two buttons mounted in one hole.
Green upper button, red lower button

Illuminated *(see page 9*
Two buttons plus one pilot light mounted in one hole.
Green upper button, red lower button



Mushroom pushbuttons
Momentary

Non-illuminated *(see page 8)*

Illuminated *(see page 9)*



Emergency stop pushbuttons
Twist release or Pull release

Non-illuminated *(see page 11)*

Illuminated *(see page 11)*



Buzzer

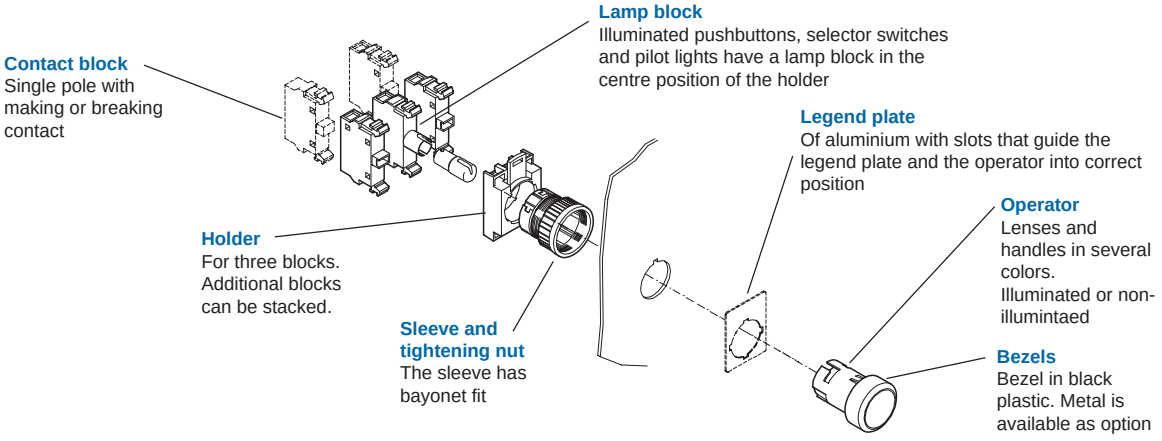
Non-illuminated *(see page 12)*



Potentiometer/ Resistor

Non-illuminated *(see page 12)*

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



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



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Selector switches - Compact range

Non-illuminated



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

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

Contacts actuated

Two position selector switch
Contacts included,

	actuated in position **C**			
	NC	NO	NC	NO
	11	13	21	23
	12	14	22	24
1NO	–	1	–	–
2NO	–	1	–	1
1NC	1	–	–	–
2NC	1	–	1	–
1NO + 1NC	–	1	1	–

Three position selector switch
Contacts included,

	actuated in position:			
	A		**C**	
	NC	NO	NC	NO
	21	23	11	13
	22	24	12	14
2NO	–	1	–	1
2NC	1	–	1	–
1NO + 1NC	1	–	–	1

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Pilot lights - Compact range

Illuminated





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

Rated voltage V	Rated current (mA)	Type of current	Color	Lumi-nance (mcd)	Wave-length (nM)	Type	Order Code	Weight, kg
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

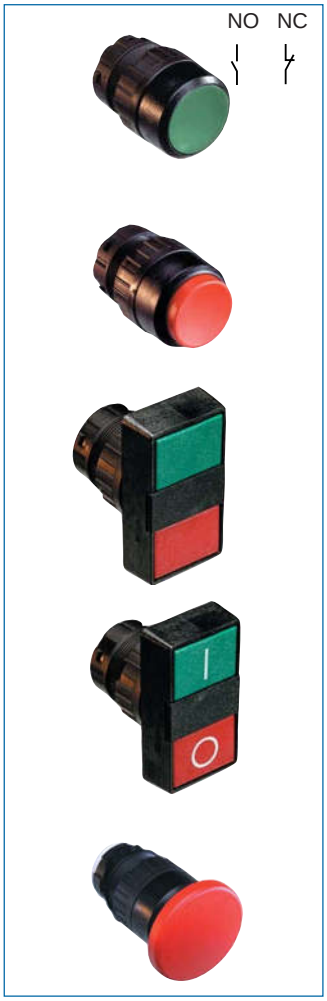
Ordering

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

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Pushbuttons – Modular range

Non-illuminated



Designation, design and function	Type	Order Code	Weight, kg
Pushbutton with flush button Momentary	**KP1-10■** [1]	**1SFA 616 100 R100■**	0.016
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
Pushbutton with extended button Momentary	**KP3-10■** [1]	**1SFA 616 102 R100■**	0.016
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
Double pushbutton			
Green upper button, Red Lower button No text	**KPD1-10■**	**1SFA 616 130 R100■**	0.025
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
Double pushbutton			
Green upper button, Red Lower button Text: I/0	**KPD2-10■**	**1SFA 616 131 R100■**	0.025
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
Mushroom pushbutton (red, yellow or black) Momentary	**KPM1-10■**	**1SFA 616 124 R100■**	0.039
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

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

Color code

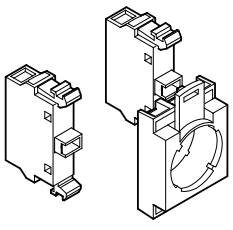
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Red	**R**	**1**
Green	**G**	**2**
Yellow	**Y**	**3**
Blue	**L**	**4**
White	**W**	**5**
Black	**B**	**6**
Clear [1]	**C**	**8**

[1] For use with text cap.

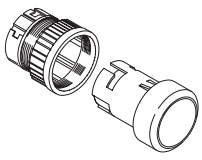
Ordering example

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

● **Accessories** ..... page 14 ● **Technical data** ..... page 18-19 ● **Dimensions** ..... page 20

Pushbuttons – Modular range

Illuminated



Designation, design and function	Type	Order Code	Weight, kg
Pushbutton with flush button Momentary	**KP1-11■** [2]	**1SFA 616 100 R110■**	0.016
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
Pushbutton with extended button Momentary	**KP3-11■** [2]	**1SFA 616 102 R110■**	0.016
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
Double pushbutton Green upper button, Red Lower button No text	**KPD1-11■**	**1SFA 616 130 R110■**	0.025
Contact blocks, lamp block and holder:			
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
Double pushbutton Green upper button, Red Lower button Text: I/0	**KPD2-11■**	**1SFA 616 131 R110■**	0.025
Contact blocks, lamp block and holder:			
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
Mushroom pushbutton (red, yellow or black) Momentary	**KPM1-11■**	**1SFA 616 124 R110■**	0.039
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 KPX-1 1X with the figure '3'.

Color code

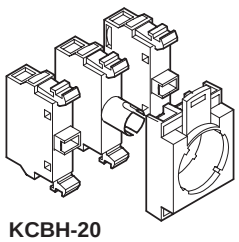
	Type KPXX-11■ ■	Order Code 1SFA 616 1XX R110■ ■
Red	**R**	**1**
Green	**G**	**2**
Yellow	**Y**	**3**
Blue	**L**	**4**
White	**W**	**5**
Clear [1]	**C**	**8**

[1] For use with text cap.

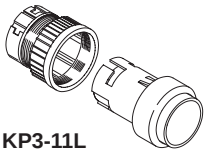
Ordering example

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)



KCBH-20



KP3-11L

● **Accessories** ..... page 14 ● **Technical data** ..... page 18-19 ● **Dimensions** ..... page 20

Selector switches – Modular range

Non-illuminated Illuminated



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

Key code

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

Codes for illuminated selector switches

Color code

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

● **Accessories** ..... page 14 ● **Technical data** ..... page 18-19 ● **Dimensions** ..... page 20

Emergency stop pushbuttons – Modular range

Non-illuminated Illuminated



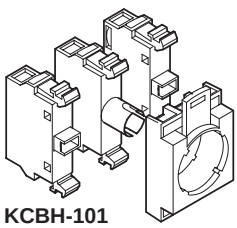
Designation, design and function	Type	Order Code	Weight, kg
Emergency stop pushbutton, 40 mm (only red) Twist release	**KPMT3-10■**	**1SFA 616 510 R100■**	0.041
Contact blocks and safety holder [1]**:**			
1 NO	**KCBHS-10**	**1SFA 616 605 R1101**	
1 NC	**KCBHS-01**	**1SFA 616 605 R1110**	
1 NO +1 NC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

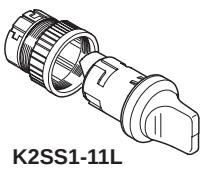
[1] The safety holder can only be used for the above mentioned emergency stop pushbutton.

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)

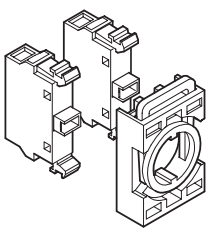

KCBH-101

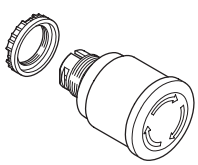

K2SS1-11L

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


KCBHS-20


KPMT3-10R

● **Accessories** ..... page 14 ● **Technical data** ..... page 18-19 ● **Dimensions** ..... page 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			
Continuous tone type:			
24 V AC/DC	**KB1-4010**	**1SFA 616 401 R4010**	0.020
115V AC/DC	**KB1-4030**	**1SFA 616 401 R4030**	0.020
230 V AC/DC	**KB1-4040**	**1SFA 616 401 R4040**	
Pulsating tone type:			
24 V AC/DC	**KB1-4110**	**1SFA 616 401 R4110**	0.020
115V AC/DC	**KB1-4130**	**1SFA 616 401 R4130**	0.020
230 V AC/DC	**KB1-4140**	**1SFA 616 401 R4140**	0.024
Potentiometer/Resistor			
Black knob with integrated position indication and marking in white			
5 kohm	**KT-105B**	**1SFA 616 410 R1056**	0.034
10 kohm	**KT- 110B**	**1SFA 616 410 R1106**	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

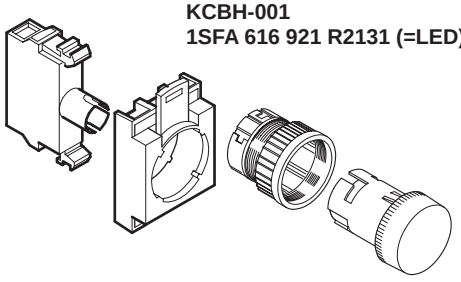
Color code for the pilot light head

	Type KXXX-11■ ■	Order Code 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)



● **Accessories** ..... page 14 ● **Technical data** ..... page 18-19 ● **Dimensions** ..... page 20

Assembled stations

with modular range pilot devices















Non-metallic enclosures

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

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

Included contact blocks NC	NO	Legend plate text Left	Centre	Right	Button/cap color Left	Centre	Right	Order Code	Weight, kg
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

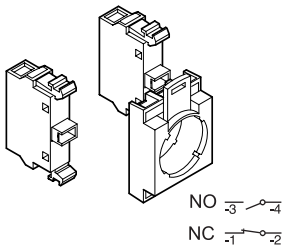
Included contact blocks NO	Legend plate text	Button/cap color	Order Code	Weight, kg
1-seat Grey				
One pushbutton. Momentary. Degree of protection IP 66.				
1	I	Green	**1SFA 616 831 R1001**	0.380

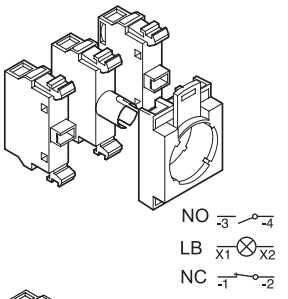
Included contact blocks NC	Legend plate text	Button/cap color	Order Code	Weight, kg
1-seat Grey				
40 mm emergency stop button. Maintained. Pull release. Degree of protection IP 54.				
1	Emergency stop	Red	**1SFA 616 831 R1018**	0.406

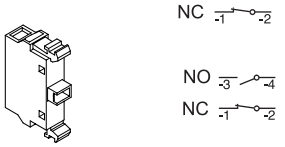
Non-metallic enclosures with Field Bus Interface

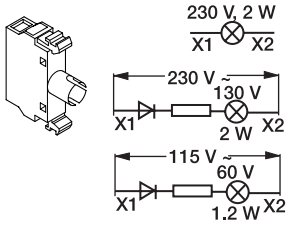
Description	Type	Order Code	Weight, kg
1-seat Grey top/black bottom			
Emergency stop pushbutton	**KEPN1-5001**	**1SFA616 841 R5001**	0.256
2-seat Grey top/black bottom			
Two pushbuttons (On/OFF)	**KEPN2-5001**	**1SFA616 842 R5001**	0.332
3-seat Grey top/black bottom			
Two pushbuttons (On/OFF) and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

● **Accessories** ..... page 14 ● **Technical data** ..... page 18-19 ● **Dimensions** ..... page 21











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. For 130 V filament bulb max. 2 W.	**KLB-3**	**SK 616 003-C**	0.020
115 V AC and DC supply voltage. For 24 V LED	**KLB-4**	**SK 616 003-G**	0.017
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



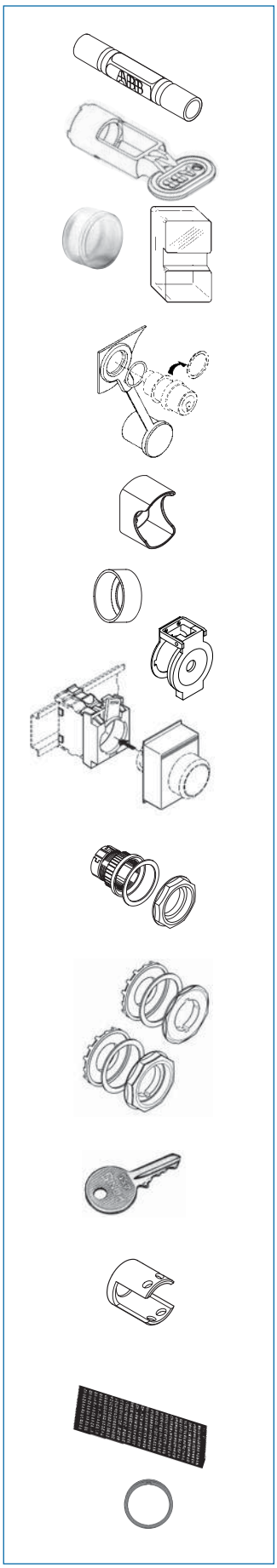


Description	Rated voltage V	Rated current mA	Rated output W	Service life h	Color	Wave-length nM	Luminance mcd	Type	Order Code	Weight, kg
Filament bulbs Ba 9s base										
Type of current: AC/DC.										
	6	200	1.2	10 000				**KA2-1008**	**1SFA 616 921 R1008**	0.002
	12	100	1.2	10 000				**KA2-1018**	**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 (-) nd the bottom contact to anode (+).										
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

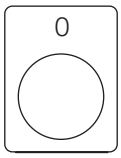
[1] At AC the luminance is decreased with 30 % and there is also a slight flickering.
Note: LEDs for other voltages, please contact your nearest ABB sales office

Pilot devices, Ø 22 mm – Accessories

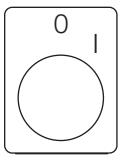
Ordering

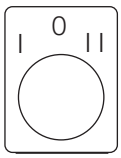


Description		Type	Order Code	Weight. kg
Lamp changing tool				
For LED and for bulbs.		**KA1-8072**	**1SFA 616 920 R8072**	0.002
Mounting tool				
Used for tightening the nut of the attachment device in confined spaces.			**1SFA 616 920 R8015**	0.021
Membrane of silicone				
Of transparent, heat and 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		**1SFA 616 920 R8052**	0.002
	Extended button		**1SFA 616 920 R8002**	0.002
	Double pushbutton (only modular range)		**SK 616 503-4**	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		**1SFA 616 920 R8003**	0.012
	Metal		**1SFA 616 920 R8004**	0.037
For use with 22 mm Emergency Stop				
	Black plastic		**1SFA 616 920 R8027**	0.007
	Metal		**1SFA 616 920 R8028**	0.021
For use with 22 mm Potentiometer, Compact Pilot Light and Buzzer				
	Black plastic		**1SFA 616 920 R8029**	0.010
	Metal		**1SFA 616 920 R8030**	0.035
Extra key				
Ronis 455 (Key code 71)			**SK 616 021-71**	0.007
Ronis 421 (Key code 72)			**SK 616 021-72**	0.007
Ronis 3433-E (Key code 73)			**SK 616 021-73**	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

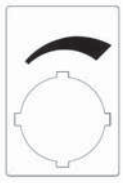


H=39 mm W=29,6 mm

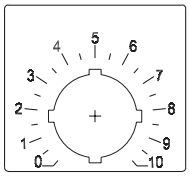








Symbol plate
29.6 x 44.5 mm



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: Centre / Right	**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: Left / Centre / Right	**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

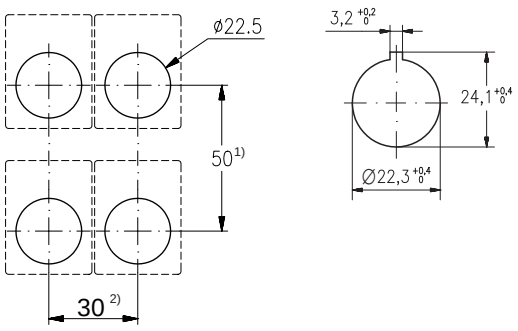
Temperature

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



1) 55 mm when legend plate H= 44.5 mm is used.
61 mm for mushroom pushbutton with D=60 mm

2) 37 mm when legend plate with insert is used,

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

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

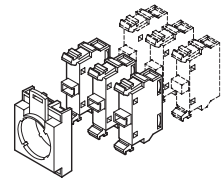
Short circuit protection
Max. fuse at 1 kA 16 A ordinary, 10 A delayed

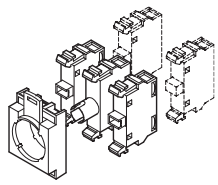
Tightening torque 0.9 Nm

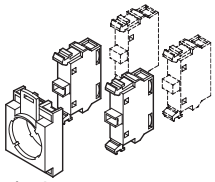
Contact blocks type KCB, cont.

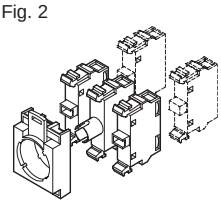
Max. number of contact blocks per operator
Contact blocks may be stacked in max. two levels, see below

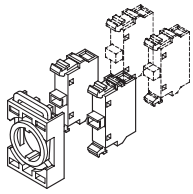
Operator	Non-ill.	Illuminated
Pushbutton with flush or extended button, type **KP1**, **KP2**, **KP3**, **KP4**	6 (Fig. 1)	4 +1 LB (Fig. 2)
Double pushbutton, type **KPD2**	4 (Fig. 3)	4 +1 LB (Fig. 4)
Mushroom pushbutton, momentary, type **KPM1**, **KPM2**	6 (Fig. 1)	4 +1 LB (Fig. 2)
Selector switch, 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)

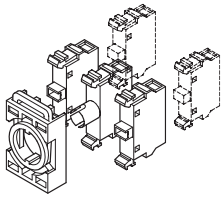

Fig. 1

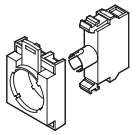

Fig. 2


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

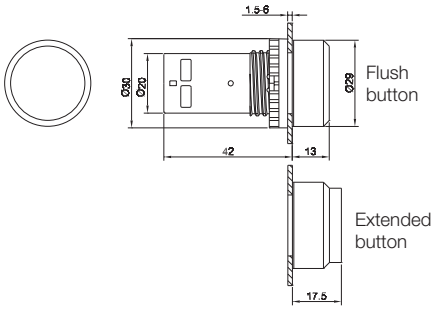
Service life of filament bulb
It is generally true to say that bulbs for lower voltages give more light and withstand vibrations better than bulbs for higher voltages.

Pilot devices, Ø 22 mm

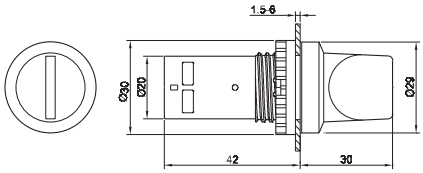
Dimensions

Compact range

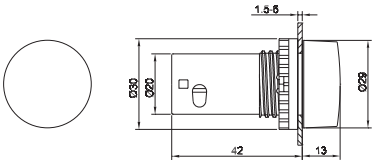
Pilot light



Pushbutton

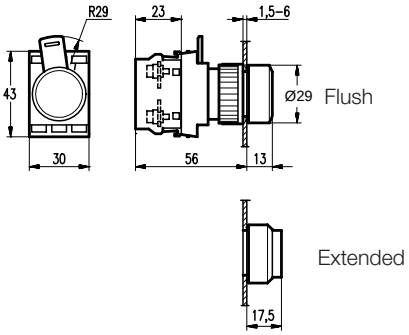


Selector switch

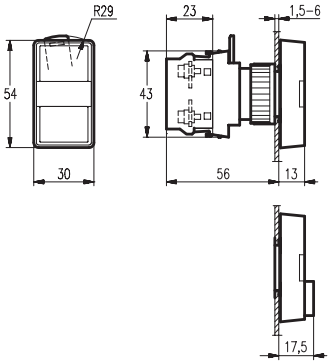


Modular range

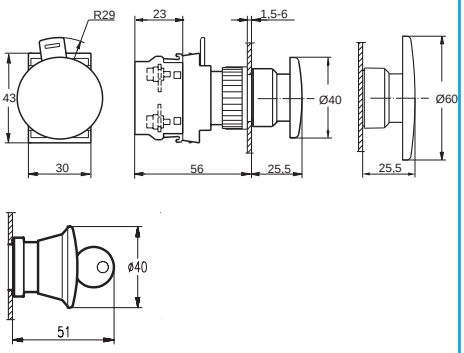
Pushbutton



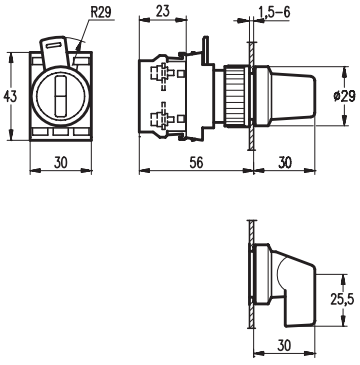
Double pushbutton



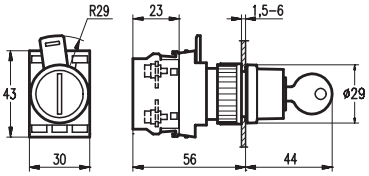
Mushroom pushbutton



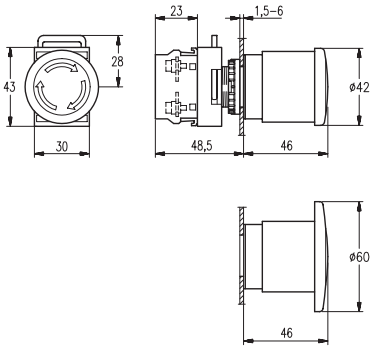
Selector switch



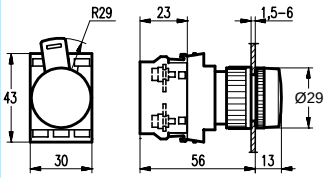
Key-operated selector switch



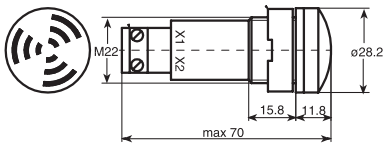
Emergency stop pushbutton



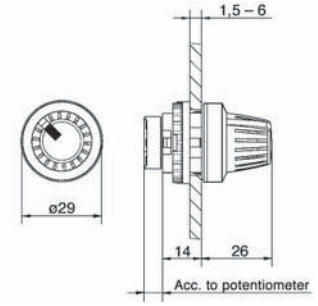
Pilot light



Buzzer



Potentiometer



Dimensions in mm.

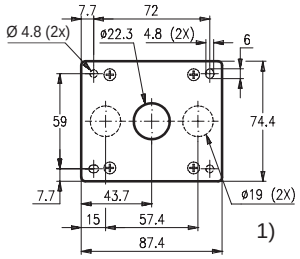
Pilot devices, Ø 22 mm

Dimensions

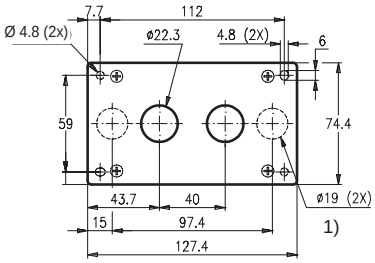
Enclosures, non-metallic

Dimensions in mm.

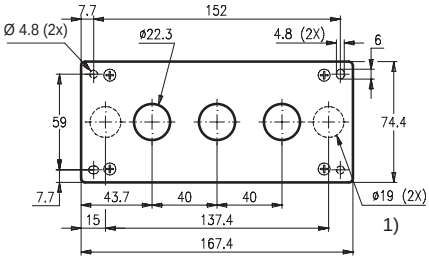
1 seat

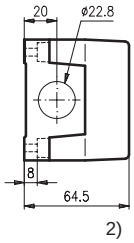


2 seats



3 seats

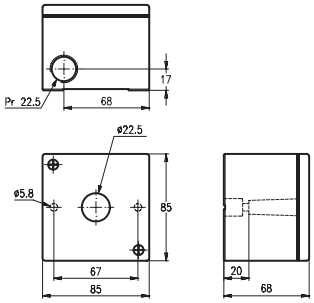




1) Knock-outs in the bottom
2) Both sides identical. Knock-outs, D = 22.5 or 28.6

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

Explanantion 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)
Y = 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.













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