Short Form Catalogue

Pilot devices, 22 mm

1SFC151002C0201, edition 3 September 2005
Superseedes Catalogue 1SFC151002C0201, December 2004



ABB – A sure hit in pilot devices



Part of comprehensive ABB program

The ABB Pilot Devices are part of the comprehensive ABB program of high quality Low Voltage Products and Systems for buildings, industries and OEM's. Much of this is sold through external channel partners such as distributors, system integrators and panel builders. Our products meet all essential national and international standards such as IEC, EN, UL, CSA, CCC etc.

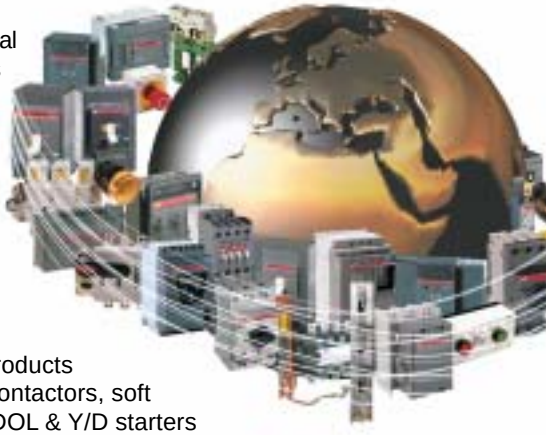


ABB offers a modern range of Control products such as contactors, soft starters, DOL & Y/D starters and a wider range of electronic relays, switches and sensors.

Pilot Devices

ABB offers a complete range of 22 mm pushbuttons, emergency stops, selector switches and signalling units. These are complemented with enclosures and a wide range of accessories.

The main advantage is the robustness and the fast and easy installation ensuring cost efficiency for our customers. The ABB Pilot Devices are suitable for all types of industrial environments, indoor as well as outdoor. Other sectors of common usage include trucks, buses, trains and official buildings.

Complete range

The ABB Pilot Device family is divided into two ranges; the **Modular** range includes operators, holders, contact blocks and accessories that can be combined with high flexibility. The **Compact** range has all functions built-in in one single unit.

Modular pilot devices

The Modular range is extensive and well known all around the world for its flexibility and robustness. By combining a few basic components a large number of different devices can be acquired.

The Modular range includes pushbuttons, mushroom buttons, selector switches and emergency stops. Non-illuminated or illuminated. Further on we offer pilot lights with filament bulbs or LEDs. Buzzers, potentiometers, toggle switches, reset buttons and special definite purpose buttons (30 mm) complete the range.

The main benefits are:

- Made for tough environments
- Large text and push area
- Up to six contact blocks on one actuator
- Easy to mount and to wire

Compact pilot devices

The exciting new family of Compact pilot devices is establishing new standards of performance. No matter what your application, the new range will improve your product and streamline your cost.

The all-in-one design makes everything easier; the entire functionality is condensed into one unit. You never need to match items together and each item has a single ordering number.

The Compact range includes pushbuttons, selector switches, emergency stops and pilot lights. These work in perfect harmony with the extensive Modular range since the front design is identical.

The main benefits are:

- Robust design
- Fast mounting
- Built in LED as an option
- Reduced stock keeping
- Low built-in depth

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



In the Modular range the Emergency stop pushbuttons from ABB were in the front line to pass the tough tests required to fulfil the standard IEC 60 947-5-5.
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 (Safety of machinery).

Now we also can offer Emergency stop devices in our Compact range.

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.

Assembled stations and enclosures

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



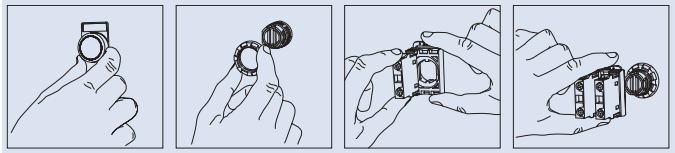
Accessories

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



Fast and easy to install

All pilot devices are easy to install. Spring-loaded tabs ensure that actuators and legend plates are in correct position. Same actuator can be used in both notched and round holes.



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.
- Different choices of bezels - black plastic or metal. Grey plastic as accessory.
- 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 positive opening for high performance in safety circuits.

Worldwide availability

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



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

Pilot Devices

Overview

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




Pushbuttons

Flush button Momentary or Maintained	Extended button Momentary or maintained

Non-illuminated *(see page 6)*

Illuminated (see page 7)



Double pushbuttons

Non-illuminated *(see page 6)*
Two buttons mounted in one hole.
Green upper button, red lower button

Illuminated *(see page 7)*
Two buttons plus one pilot light mounted in one hole.
Green upper button, red lower button



Mushroom pushbuttons

Momentary

Non-illuminated *(see page 6)*

Illuminated *(see page 7)*



Emergency stop pushbuttons

Ø 40 mm Twist release	Ø 40 mm Pull release

Non-illuminated *(see page 8)*

Illuminated *(see page 8)*




Selector switches

2-position Maintained	3-position Maintained

Non-illuminated *(see page 9)*

Illuminated (see page 9)



Key-operated selector switches

2-position Maintained	3-position Maintained

Non-illuminated *(see page 9)*



Pilot light

Illuminated *(see page 10)*



Buzzer

Non-illuminated *(see page 10)*



Potentiometer/ Resistor

Non-illuminated *(see page 10)*

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




Pushbuttons

Flush button Momentary or Maintained	Extended button Momentary or Maintained

Non-illuminated *(see page 11)*



Emergency stop pushbuttons

Ø 30 mm Twist release	Ø 30 mm Pull release	Ø 30 mm Key release	Ø 40 mm Twist release	Ø 40 mm Pull release	Ø 40 mm Key release

Non-illuminated *(see page 12)*



Selector switches

2-position Maintained or Momentary	3-position Maintained or Momentary

Non-illuminated *(see page 13)*



Pilot light

with Ba 9s socket	with integrated LED
Illuminated *(see page 14)*	***Illuminated*** *(see page 14*

Pilot devices, 22 mm

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Ordering details

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

Where not other is stated Type and Order Code refer to one piece.

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

Pilot devices – Modular range

Pushbuttons, non-illuminated



Description Included contact blocks	Type	Order Code	Weight, kg
Pushbutton with flush button			
Momentary	**MP1-10■**	1SFA 611 100 R100□	0.016
Contact blocks and holder:			
1 NO	**MCBH-10**	1SFA 611 605 R1101	0.019
1 NC	**MCBH-01**	1SFA 611 605 R1110	0.019
1 NO +1 NC	**MCBH-11**	1SFA 611 605 R1111	0.032
2 NO	**MCBH-20**	1SFA 611 605 R1102	0.032
2 NC	**MCBH-02**	1SFA 611 605 R1120	0.032
Pushbutton with extended button			
Momentary	**MP3-10■**	1SFA 611 102 R100□	0.016
Contact blocks and holder:			
1 NO	**MCBH-10**	1SFA 611 605 R1101	0.019
1 NC	**MCBH-01**	1SFA 611 605 R1110	0.019
1 NO +1 NC	**MCBH-11**	1SFA 611 605 R1111	0.032
2 NO	**MCBH-20**	1SFA 611 605 R1102	0.032
2 NC	**MCBH-02**	1SFA 611 605 R1120	0.032
Double pushbutton			
Green upper button, Red Lower button No text	**MPD1-11B**	1SFA 611 130 R1106	0.025
Contact blocks and holder:			
1 NO +1 NC	**MCBH-11**	1SFA 611 605 R1111	0.032
2 NO	**MCBH-20**	1SFA 611 605 R1102	0.032
2 NC	**MCBH-02**	1SFA 611 605 R1120	0.032
Double pushbutton			
Green upper button, Red Lower button Text: I/0	**MPD2-11B**	1SFA 611 131 R1106	0.025
Contact blocks and holder:			
1 NO +1 NC	**MCBH-11**	1SFA 611 605 R1111	0.032
2 NO	**MCBH-20**	1SFA 611 605 R1102	0.032
2 NC	**MCBH-02**	1SFA 611 605 R1120	0.032
Mushroom pushbutton			
(red, yellow or black) Momentary	**MPM1-10■**	1SFA 611 124 R100□	0.039
Contact blocks and holder:			
1 NO	**MCBH-10**	1SFA 611 605 R1101	0.019
1 NC	**MCBH-01**	1SFA 611 605 R1110	0.019
1 NO +1 NC	**MCBH-11**	1SFA 611 605 R1111	0.032
2 NO	**MCBH-20**	1SFA 611 605 R1102	0.032

Codes for button colors

	Type ■	Order Code □
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

Bezel

Bezel in black plastic as standard

Bezel in metal:

Replace **1** in the:
Type MPX-**1**0X
Order Code 1SFA611XXX R**1**XXX
3 for metal bezel

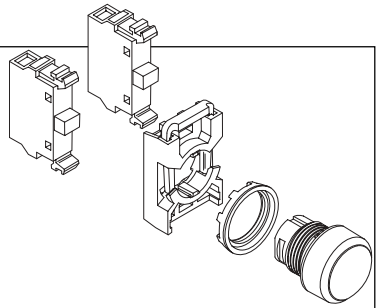


Note: Only black plastic bezel for double pushbutton

Ordering example

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

Order 1 piece of each:
MP1-10Y
MCBH-20



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Pilot devices – Modular range

Pushbuttons, illuminated



Description Included contact blocks/lamp block	Type	Order Code	Weight, kg
Pushbutton with flush button			
Momentary	**MP1-11■**	1SFA 611 100 R110□	0.016
Contact blocks, lamp block and holder:			
1 NO +1 LB	**MCBH-101**	1SFA 611 605 R1201	0.034
1 NC +1 LB	**MCBH-011**	1SFA 611 605 R1210	0.034
1 NO +1 NC +1 LB	**MCBH-111**	1SFA 611 605 R1211	0.047
2 NO +1 LB	**MCBH-201**	1SFA 611 605 R1202	0.047
2 NC +1 LB	**MCBH-021**	1SFA 611 605 R1220	0.047
Pushbutton with extended button			
Momentary	**MP3-11■**	1SFA 611 102 R110□	0.016
Contact blocks, lamp block and holder:			
1 NO +1 LB	**MCBH-101**	1SFA 611 605 R1201	0.034
1 NC +1 LB	**MCBH-011**	1SFA 611 605 R1210	0.034
1 NO +1 NC +1 LB	**MCBH-111**	1SFA 611 605 R1211	0.047
2 NO +1 LB	**MCBH-201**	1SFA 611 605 R1202	0.047
2 NC +1 LB	**MCBH-021**	1SFA 611 605 R1220	0.047
Double pushbutton [2]			
Green upper button, Red Lower button No text	**MPD1-11■**	1SFA 611 130 R110□	0.025
Contact blocks, lamp block and holder:			
1 NO +1 NC +1 LB	**MCBH-111**	1SFA 611 605 R1211	0.047
2 NO +1 LB	**MCBH-201**	1SFA 611 605 R1202	0.047
2 NC +1 LB	**MCBH-021**	1SFA 611 605 R1220	0.047
Double pushbutton [2]			
Green upper button, Red Lower button Text: I/0	**MPD2-11■**	1SFA 611 131 R110□	0.025
Contact blocks, lamp block and holder:			
1 NO + 1 NC +1 LB	**MCBH-111**	1SFA 611 605 R1211	0.047
2 NO +1 LB	**MCBH-201**	1SFA 611 605 R1202	0.047
2 NC +1 LB	**MCBH-021**	1SFA 611 605 R1220	0.047
Mushroom pushbutton			
(red or yellow) Momentary	**MPM1-11■**	1SFA 611 124 R110□	0.039
Contact blocks, lamp block and holder:			
1 NO +1 LB	**MCBH-101**	1SFA 611 605 R1201	0.034
1 NC +1 LB	**MCBH-011**	1SFA 611 605 R1210	0.034
1 NO +1 NC +1 LB	**MCBH-111**	1SFA 611 605 R1211	0.047
2 NO +1 LB	**MCBH-201**	1SFA 611 605 R1202	0.047
2 NC +1 LB	**MCBH-021**	1SFA 611 605 R1220	0.047

Codes for button/lens colors

	Type ■		Order Code □
Red	**R**	●	1
Green	**G**	●	2
Yellow	**Y**	●	3
Blue	**L**	●	4
White	**W**	○	5
Clear [1]	**U**	○	8

[1] For use with text cap

[2] Available lens colors; Red, green, yellow and clear

Bezel

Bezel in black plastic as standard

Bezel in metal:

Replace 1 in the:

Type MPX-1 1X

Order Code 1SFA611XXX R 1XXX

3 for metal bezel

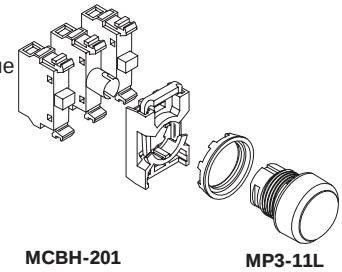


Note: Only black plastic bezel for double pushbutton

Ordering example

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

Order 1 piecc of each:
MP3-11L
MCBH-201
Filament bulb or LED
(See accessories)



MCBH-201 **MP3-11L**

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Pilot devices – Modular range

Emergency stop pushbuttons
Non-illuminated Illuminated

Fulfills IEC 60947-5-5

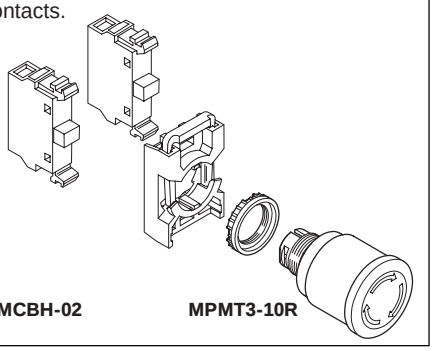


Description Included contact blocks/lamp block	Type	Order Code	Weight, kg
Emergency stop pushbutton, 40 mm (only red) Twist release **Contact blocks and safety holder:**	**MPMT3-10R**	1SFA 611 510 R1001	0.041
1 NO	**MCBH-10**	1SFA 611 605 R1101	0.019
1 NC	**MCBH-01**	1SFA 611 605 R1110	0.019
1 NO +1 NC	**MCBH-11**	1SFA 611 605 R1111	0.032
2 NO	**MCBH-20**	1SFA 611 605 R1102	0.032
2 NC	**MCBH-02**	1SFA 611 605 R1120	0.032
Emergency stop pushbutton, 40 mm (only red) Pull release **Contact blocks and safety holder:**	**MPMP3-10R**	1SFA 611 511 R1001	0.041
1 NO	**MCBH-10**	1SFA 611 605 R1101	0.019
1 NC	**MCBH-01**	1SFA 611 605 R1110	0.019
1 NO +1 NC	**MCBH-11**	1SFA 611 605 R1111	0.032
2 NO	**MCBH-20**	1SFA 611 605 R1102	0.032
2 NC	**MCBH-02**	1SFA 611 605 R1120	0.032
Illuminated emergency stop push-button, 40 mm (only red) Twist release **Contact blocks, lamp block and safety holder:**	**MPMT3-11R**	1SFA 611 510 R1101	0.041
1 NO +1 LB	**MCBH-101**	1SFA 611 605 R1201	0.034
1 NC +1 LB	**MCBH-011**	1SFA 611 605 R1210	0.034
1 NO +1 NC +1 LB	**MCBH-111**	1SFA 611 605 R1211	0.047
2 NO +1 LB	**MCBH-201**	1SFA 611 605 R1202	0.047
2 NC +1 LB	**MCBH-021**	1SFA 611 605 R1220	0.047
Illuminated emergency stop push-button, 40 mm (only red) Pull release **Contact blocks, lamp block and safety holder:**	**MPMP3-11R**	1SFA 611 511 R1101	0.041
1 NO +1 LB	**MCBH-101**	1SFA 611 605 R1201	0.034
1 NC +1 LB	**MCBH-011**	1SFA 611 605 R1210	0.034
1 NO +1 NC +1 LB	**MCBH-111**	1SFA 611 605 R1211	0.047
2 NO +1 LB	**MCBH-201**	1SFA 611 605 R1202	0.047
2 NC +1 LB	**MCBH-021**	1SFA 611 605 R1220	0.047

Ordering example – Emergency stop pushbutton

Requested: A non-illuminated emergency stop pushbutton, twist release, with two NC contacts.

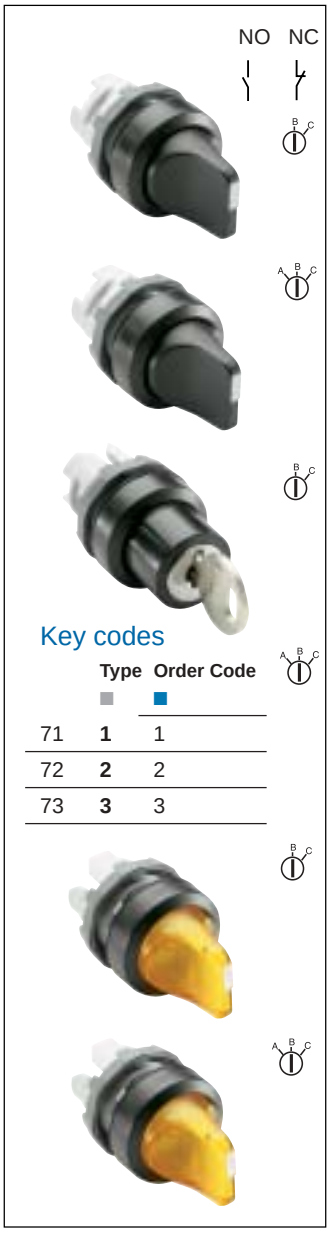
Order 1 piece of each:
MPMT3-10R
MCBH-02



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Pilot devices – Modular range

Selector switches
Non-illuminated Illuminated



Key codes

	Type ■	Order Code ■
71	**1**	1
72	**2**	2
73	**3**	3

Description Included contact blocks/lamp block	Type	Order Code	Weight, kg
Selector switch, short handle. **Two position** Maintained **Contact blocks and holder:**	**M2SS1-10■**	1SFA 611 200 R100□	0.024
1 NO	**MCBH-10**	1SFA 611 605 R1101	0.019
1 NC	**MCBH-01**	1SFA 611 605 R1110	0.019
1 NO +1 NC	**MCBH-11**	1SFA 611 605 R1111	0.032
2 NO	**MCBH-20**	1SFA 611 605 R1102	0.032
2 NC	**MCBH-02**	1SFA 611 605 R1120	0.032
Selector switch, short handle. **Three position** Maintained **Contact blocks and holder:**	**M3SS1-10■**	1SFA 611 210 R100□	0.024
1 NO	**MCBH-10**	1SFA 611 605 R1101	
1 NC	**MCBH-01**	1SFA 611 605 R1110	
1 NO +1 NC	**MCBH-11**	1SFA 611 605 R1111	0.032
2 NO	**MCBH-20**	1SFA 611 605 R1102	0.032
2 NC	**MCBH-02**	1SFA 611 605 R1120	0.032
Key-operated selector switch. **Two position** Key removable in both positions **Contact blocks and holder:**	**M2SSK1-10■**	1SFA 611 280 R100■	0.069
1 NO +1 NC	**MCBH-11**	1SFA 611 605 R1111	0.032
2 NO	**MCBH-20**	1SFA 611 605 R1102	0.032
2 NC	**MCBH-02**	1SFA 611 605 R1120	0.032
Key-operated selector switch. **Three position** Key removeable in all positions **Contact blocks and holder:**	**M3SSK1-10■**	1SFA 611 283 R100■	0.069
1 NO +1 NC	**MCBH-11**	1SFA 611 605 R1111	0.032
2 NO	**MCBH-20**	1SFA 611 605 R1102	0.032
2 NC	**MCBH-02**	1SFA 611 605 R1120	0.032
Illuminated selector switch, short handle. **Two positions** Maintained **Contact blocks, lamp block and holder:**	**M2SS1-11■**	1SFA 611 200 R110□	0.024
1 NO +1 LB	**MCBH-101**	1SFA 611 605 R1201	0.034
1 NC +1 LB	**MCBH-011**	1SFA 611 605 R1210	0.034
1 NO +1 NC +1 LB	**MCBH-111**	1SFA 611 605 R1211	0.047
2 NO +1 LB	**MCBH-201**	1SFA 611 605 R1202	0.047
2 NC +1 LB	**MCBH-021**	1SFA 611 605 R1220	0.047
Illuminated selector switch, short handle. **Three positions** Maintained **Contact blocks, lamp block and holder:**	**M3SS1-11■**	1SFA 611 210 R110□	0.024
1 NO +1 LB	**MCBH-101**	1SFA 611 605 R1201	0.034
1 NC +1 LB	**MCBH-011**	1SFA 611 605 R1210	0.034
1 NO +1 NC +1 LB	**MCBH-111**	1SFA 611 605 R1211	0.047
2 NO +1 LB	**MCBH-201**	1SFA 611 605 R1202	0.047
2 NC +1 LB	**MCBH-021**	1SFA 611 605 R1220	0.047

Color codes for non-illuminated selector switches

	Type ■		Order Code □
Black	**B**	●	6
Red	**R**	●	1
Grey	**U**	●	7

Bezel

Bezel in black plastic as standard
Bezel in metal:
Replace 1 in the:
Type MXSS1-1 1X
Order Code 1SFA611XXX R 1XXX
3 for metal bezel



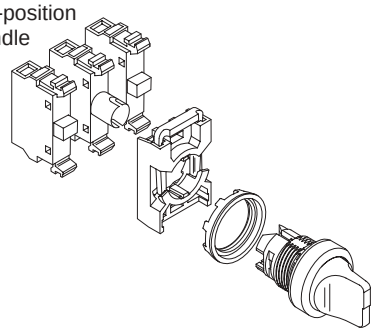
Color codes for illuminated selector switches

	Type ■		Order Code □
Red	**R**	●	1
Green	**G**	●	2
Yellow	**Y**	●	3
Blue	**L**	●	4
White	**W**	○	5
Clear	**C**	○	8

Ordering example – Selector switches

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

Order 1 piece of each:
M2SS1-11L
MCBH-101
Filament bulb or LED,
(See accessories)



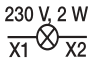
MCBH-101 **M2SS1-11L**

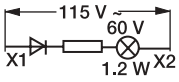
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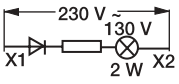
Pilot devices – Modular range

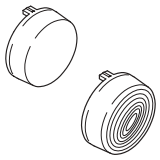
Pilot light, buzzer and potentiometer















Description/Supply voltage	Type	Order Code	Weight, kg
Pilot light head	**ML1-100■**	1SFA 611 400 R100■	0.018
Lamp block with holder:			
For max. 2 W, 230 V AC and DC filament bulb or LED	**MCBH-001**	1SFA 611 605 R1200	0.021
115 V AC supply voltage. **For 60 V filament bulb max. 1.2 W**	**MCBH-002**	1SFA 611 605 R1300	0.023
230 V AC supply voltage. **For 130 V filament bulb max. 2 W**	**MCBH-003**	1SFA 611 605 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	**KA1-8005**	1SFA 616 920 R8005	0.001

Description/Supply voltage	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	0.020
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	0.020
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

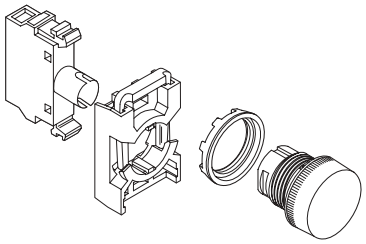
Color codes for pilot light head

	Type ■	Order Code □
Red	**R**	1
Green	**G**	2
Yellow	**Y**	3
Blue	**L**	4
White	**W**	5
Clear	**U**	8

Ordering example

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

Order 1 piece of each:
ML1-100R
MCBH-001
KA2-2131 (= LED acc. to page 18)



• **Accessories** ..... page 17 • **Technical data** ..... page 25-26 • **Dimensions** ..... page 28

Pilot devices - Compact range

Flush and extended pushbuttons, non-illuminated



Description	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
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
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
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 O			
Contacts included:			
1NC	**CP33-10B-01**	1SFA 619 132 R1046	0.018

Codes for button colors

	Type ■		Order Code □
Red	**R**		**1**
Green	**G**		**2**
Yellow	**Y**		**3**
Blue	**L**		**4**
White	**W**		**5**
Black	**B**		**6**
Grey	**U**		**7**

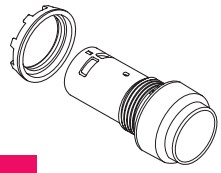
Bezel

Bezel in black plastic as standard
Bezel in metal:
Replace 1 in the:
Type CPX-1 0X
Order Code 1SFA619XXX R 1XXX
3 for metal bezel

Ordering example – Compact 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

• **Accessories** ..... page 18 • **Technical data** ..... page 27 • **Dimensions** ..... page 28

Pilot devices - Compact range

Emergency stop pushbutton, non-illuminated

Fulfills IEC 60947-5-5



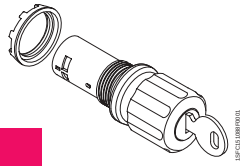
The emergency stops with key release are delivered with two keys.

Description	Color	Type	Order Code	Weight, kg
Emergency stop pushbutton, Ø 30 mm				
Twist release	Red			
Contacts included:				
1 NC		**CE3T-10R-01**	1SFA 619 500 R1041	0.032
2 NO		**CE3T-10R-20**	1SFA 619 500 R1021	0.032
2 NC		**CE3T-10R-02**	1SFA 619 500 R1051	0.032
1 NO +1 NC		**CE3T-10R-11**	1SFA 619 500 R1071	0.032
Pull release	Red			
Contacts included:				
2 NC		**CE3P-10R-02**	1SFA 619 501 R1051	0.032
1 NO +1 NC		**CE3P-10R-11**	1SFA 619 501 R1071	0.032
Key release	Red			
(Key code 71, Ronis 455)				
Contacts included:				
2 NC		**CE3K1-10R-02**	1SFA 619 502 R1051	0.060
1 NO +1 NC		**CE3K1-10R-11**	1SFA 619 502 R1071	0.060
Emergency stop pushbutton, Ø 40 mm				
Twist release	Red			
Contacts included:				
1 NC		**CE4T-10R-01**	1SFA 619 550 R1041	0.036
2 NO		**CE4T-10R-20**	1SFA 619 550 R1021	0.036
2 NC		**CE4T-10R-02**	1SFA 619 550 R1051	0.036
1 NO +1 NC		**CE4T-10R-11**	1SFA 619 550 R1071	0.036
Pull release	Red			
Contacts included:				
2 NC		**CE4P-10R-02**	1SFA 619 551 R1051	0.036
1 NO +1 NC		**CE4P-10R-11**	1SFA 619 551 R1071	0.036
Key release	Red			
(Key code 71, Ronis 455)				
Contacts included:				
2 NC		**CE4K1-10R-02**	1SFA 619 552 R1051	0.064
1 NO +1 NC		**CE4K1-10R-11**	1SFA 619 552 R1071	0.064

Ordering example – Compact Emergency stop pushbutton

Requested: A compact emergency stop pushbutton, 30 mm, with key release and two NC contacts.

Order: 10 pieces of CE3K1-10R-02.



Minimum order quantity: 10 pieces
Packing: 1 piece/plastic bag.
50 pieces/box

• **Accessories** ..... page 18 • **Technical data** ..... page 27 • **Dimensions** ..... page 29

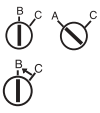
Pilot devices - Compact range

Two and three position selector switches, non-illuminated



Contacts actuated

Two position selector switch
Contacts included,

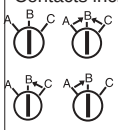


	actuated in position **C**			
	NC	NO	NC	NO
	11 12	13 14	21 22	23 24
1NO	–	1	–	–
2NO	–	1	–	1
1NC	1	–	–	–
2NC	1	–	1	–
1NO + 1NC	–	1	1	–



Contacts actuated

Three position selector switch
Contacts included,



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

Description	Type	Order Code	Weight, kg
Selector switch with. Short handle. Two positions			
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
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
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 with. Short handle. Three positions			
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
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
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
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

Codes for handles

	Type ■		Order Code □
Black	**B**	●	6
Red	**R**	●	1
Grey	**U**	●	7

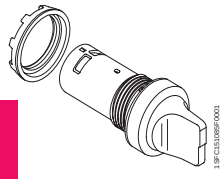
Bezel

Bezel in black plastic as standard
Bezel in metal:
Replace 1 in the:
Type CPX-1 0X
Order Code 1SFA619XXX R 1XXX
3 for metal bezel

Ordering example – Compact selector switches

Requested: A red compact selector switch with three positions, Momentary, spring return from A to B and maintained position in C. With 2 NC contacts.

Order: 10 pieces of C3SS7-10R-02



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

● **Accessories** ..... page 18 ● **Technical data** ..... page 27 ● **Dimensions** ..... page 28

Pilot devices - Compact range

Pilot lights/Pilot lights with integrated LED





Description	Type	Order Code	Weight, kg
Pilot light Ba 9s base, bulb not included			
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

Color	Rated current mA	Lumi-nance mcd	Wave-length nm	Type	Order Code	Weight, kg
Pilot light with integrated LED						
Service life >50 000 hours						
Rated voltage 12 V, DC [1]						
Red	30	60	625	**CL-501R**	1SFA 619 402 R5011	0.023
Green	15	126	520	**CL-501G**	1SFA 619 402 R5012	0.023
Yellow	30	60	590	**CL-501Y**	1SFA 619 402 R5013	0.023
Blue	30	22	470	**CL-501L**	1SFA 619 402 R5014	0.023
White	30	88	[2]	**CL-501W**	1SFA 619 402 R5015	0.023
Rated voltage 24 V, AC/DC						
Red	15	60	625	**CL-502R**	1SFA 619 402 R5021	0.023
Green	15	126	520	**CL-502G**	1SFA 619 402 R5022	0.023
Yellow	15	60	590	**CL-502Y**	1SFA 619 402 R5023	0.023
Blue	15	22	470	**CL-502L**	1SFA 619 402 R5024	0.023
White	15	88	[2]	**CL-502W**	1SFA 619 402 R5025	0.023
Rated voltage 48 V, AC/DC						
Red	15	60	625	**CL-504R**	1SFA 619 402 R5041	0.023
Green	15	126	520	**CL-504G**	1SFA 619 402 R5042	0.023
Yellow	15	60	590	**CL-504Y**	1SFA 619 402 R5043	0.023
Blue	15	22	470	**CL-504L**	1SFA 619 402 R5044	0.023
White	15	88	[2]	**CL-504W**	1SFA 619 402 R5045	0.023
Rated voltage 60 V, AC/DC						
Red	15	60	625	**CL-505R**	1SFA 619 402 R5051	0.023
Green	15	126	520	**CL-505G**	1SFA 619 402 R5052	0.023
Yellow	15	60	590	**CL-505Y**	1SFA 619 402 R5053	0.023
Blue	15	22	470	**CL-505L**	1SFA 619 402 R5054	0.023
White	15	88	[2]	**CL-505W**	1SFA 619 402 R5055	0.023
Rated voltage 110-130 V, AC						
Red	15	60	625	**CL-513R**	1SFA 619 402 R5131	0.023
Green	15	126	520	**CL-513G**	1SFA 619 402 R5132	0.023
Yellow	15	60	590	**CL-513Y**	1SFA 619 402 R5133	0.023
Blue	15	22	470	**CL-513L**	1SFA 619 402 R5134	0.023
White	15	88	[2]	**CL-513W**	1SFA 619 402 R5135	0.023
Rated voltage 110-130 V, DC [1]						
Red	15	60	625	**CL-515R**	1SFA 619 402 R5151	0.023
Green	15	126	520	**CL-515G**	1SFA 619 402 R5152	0.023
Yellow	15	60	590	**CL-515Y**	1SFA 619 402 R5153	0.023
Blue	15	22	470	**CL-515L**	1SFA 619 402 R5154	0.023
White	15	88	[2]	**CL-515W**	1SFA 619 402 R5155	0.023
Rated voltage 220 V, DC [1]						
Red	15	60	625	**CL-520R**	1SFA 619 402 R5201	0.023
Green	15	126	520	**CL-520G**	1SFA 619 402 R5202	0.023
Yellow	15	60	590	**CL-520Y**	1SFA 619 402 R5203	0.023
Blue	15	22	470	**CL-520L**	1SFA 619 402 R5204	0.023
White	15	88	[2]	**CL-520W**	1SFA 619 402 R5205	0.023
Rated voltage 230 V, AC						
Red	15	60	625	**CL-523R**	1SFA 619 402 R5231	0.023
Green	15	126	520	**CL-523G**	1SFA 619 402 R5232	0.023
Yellow	15	60	590	**CL-523Y**	1SFA 619 402 R5233	0.023
Blue	15	22	470	**CL-523L**	1SFA 619 402 R5234	0.023
White	15	88	[2]	**CL-523W**	1SFA 619 402 R5235	0.023
Rated voltage 380 V, AC						
Red	15	60	625	**CL-530R**	1SFA 619 402 R5301	0.023
Green	15	126	520	**CL-530G**	1SFA 619 402 R5302	0.023
Yellow	15	60	590	**CL-530Y**	1SFA 619 402 R5303	0.023
Blue	15	22	470	**CL-530L**	1SFA 619 402 R5304	0.023
White	15	88	[2]	**CL-530W**	1SFA 619 402 R5305	0.023
Rated voltage 415 V, AC						
Red	15	60	625	**CL-541R**	1SFA 619 402 R5411	0.023
Green	15	126	520	**CL-541G**	1SFA 619 402 R5412	0.023
Yellow	15	60	590	**CL-541Y**	1SFA 619 402 R5413	0.023
Blue	15	22	470	**CL-541L**	1SFA 619 402 R5414	0.023
White	15	88	[2]	**CL-541W**	1SFA 619 402 R5415	0.023

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

[1] Care should be taken for DC supply where + and - must be correctly connected.(this is marked on the product, X1 (+) and X2 (-)).
[2] X=0.31, Y=0.32

• **Accessories** ..... page 18 • **Technical data** ..... page 27 • **Dimensions** ..... page 28

Assembled stations

with modular range pilot devices













Plastic enclosures. Yellow top/light grey bottom

Description [1])	Type	Order Code	Weight, kg
1-seat Emergency stop pushbutton, 40 mm. Twist release. No legend plate			
Red 2 NC	**MEPY1-1005**	1SFA 611 821 R1005	0.234
Red 1 NO + 2 NC	**MEPY1-1024**	1SFA 611 821 R1024	0.250

1-seat Plastic enclosures. Dark grey top/light grey bottom

Description [1])	Type	Order Code	Weight, kg
One flush pushbutton. Momentary			
Green 1 NO I	**MEP1-1001**	1SFA 611 811 R1001	0.200

2-seat Plastic enclosure. Dark grey top/light grey bottom

Description [1])	Type	Order Code	Weight, kg
Two flush pushbuttons. Momentary.			
Left Red 1 NC I	**Right** Green 1 NO O	**MEP2-1001**	1SFA 611 812 R1001	0.220

3-seat Plastic enclosure. Dark grey top/light grey bottom

Description [1])	Type	Order Code	Weight, kg
Two flush pushbuttons, pilot light in centre position. Momentary (Lamp block type MLB-1)			
Left Red 1 NC O	**Center** Clear 1 LB I	**Right** Green 1 NO I	**MEP3-1001**	1SFA 611 813 R1001	0.300

1-seat Metallic enclosure. Grey

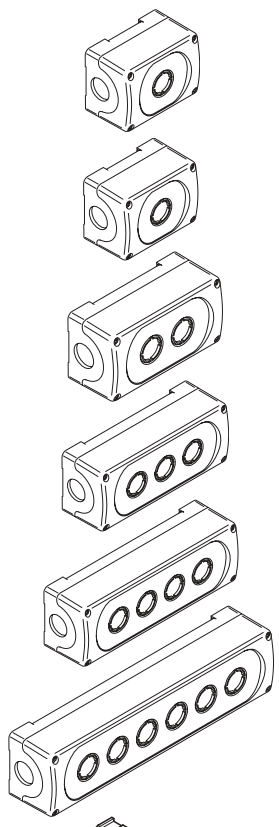
Description [1])	Type	Order Code	Weight, kg
One flush pushbutton Momentary. Degree of protection IP 66			
Green 1 NC I	**MEM1-1001**	1SFA 611 831 R1001	0.380
40 mm emergency stop button Maintained. Pull release. Degree of protection IP 66.			
Red 1 NC Emergency stop	**MEM1-1018**	1SFA 611 831 R1018	0.406

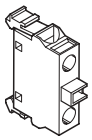
[1]) Description = Button color/cap color, Included contact blocks (NO, NC) & Lamp block (LB), Legend plate text

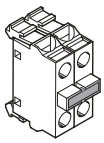
● **Accessories** ..... page 21 ● **Technical data** ..... page 25-26 ● **Dimensions** ..... page 29

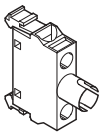
Empty plastic enclosures and accessories

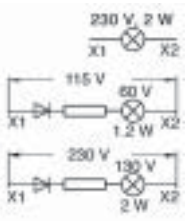
for mounting modular range pilot devices













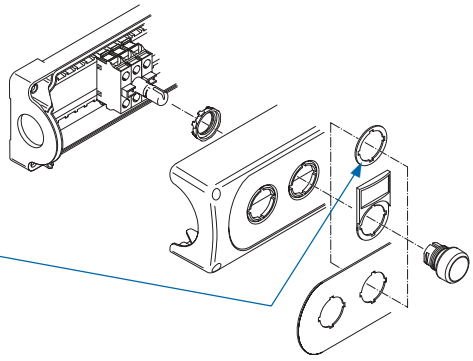
Empty plastic enclosures Now with stainless steel screws

Size	Color top/bottom	Type	Order Code	Weight, kg
1-seat	Dark grey/Light grey	**MEP1-0**	1SFA 611 811 R1000	0.15
1-seat	Yellow/Light grey	**MEPY1-0**	1SFA 611 821 R1000	0.15
2-seat	Dark grey/Light grey	**MEP2-0**	1SFA 611 812 R1000	0.17
3-seat	Dark grey/Light grey	**MEP3-0**	1SFA 611 813 R1000	0.20
4-seat	Dark grey/Light grey	**MEP4-0**	1SFA 611 814 R1000	0.23
6-seat	Dark grey/Light grey	**MEP6-0**	1SFA 611 816 R1000	0.30

When ordering

- Select operators from page 6-14.

  N.B. Selector switches with short handle for vertically mounted selector switches must be ordered from Catalogue 1SFC151001C0201, page 50-51.
- Select contact blocks and lamp blocks for rear mounting according to below.
- Accessories, see Catalogue 1SFC151001C0201, page 49
  N.B. **One spacer per operator** has to be ordered if legend plate is not used. (for rear mounted pilot devices)



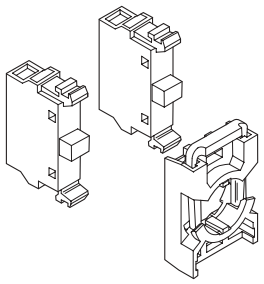
Accessories

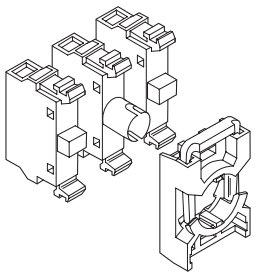
Description	Type	Order Code	Weight, kg
Contact blocks for rear mounting			
1NO	**MCB-10B**	1SFA 611 610 R2001	0.013
1NC	**MCB-01B**	1SFA 611 610 R2010	0.013
Double contact block for rear mounting			
2NO	**MCB-20B**	1SFA 611 610 R2002	0.026
2NC	**MCB-02B**	1SFA 611 610 R2020	0.026
1NO+1NC	**MCB-11B**	1SFA 611 610 R2011	0.026
Contact block for rear mounting with gold plated contacts			
1NO	**MCB-10BG**	1SFA 611 610 R2101	0.013
1NC	**MCB-01BG**	1SFA 611 610 R2110	0.013
Lamp blocks for rear mounting			
For max. 2 W, 230 V AC and DC filament bulb or LED	**MLB-1B**	1SFA 611 620 R2001	0.015
115 V AC supply voltage. **For 60 V filament bulb max. 1.2 W**	**MLB-2B**	1SFA 611 620 R2002	0.017
230 V AC supply voltage. **For 130 V filament bulb max. 2 W**	**MLB-3B**	1SFA 611 620 R2003	0.020
Spacer			
1 mm thick. Needed when legend plates are not used in plastic enclosures.			
Spacer (Packing unit 10 pieces)	–	**SK 615 516-1**	0.002
Spacer for Modular emergency stop pushbutton, page 8 (Packing unit 10 pieces)	**KA1-8045**	**1SFA 616 920 R 8045**	0.004

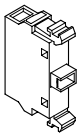
● **Technical data** ..... page 25-26 ● **Dimensions** ..... page 29

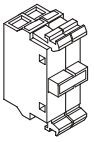
Pilot devices, Ø 22 mm – Accessories

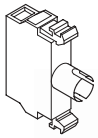
Contact blocks/lamp blocks for Modular range

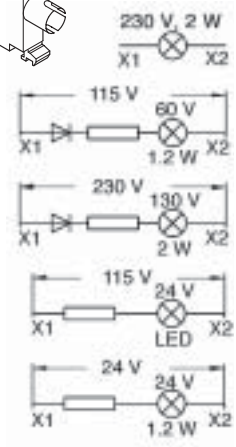


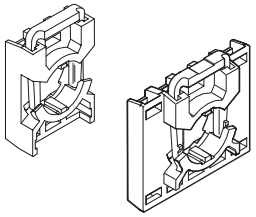












Description	Type	Order Code	Weight, kg
Contact blocks and lamp blocks with holder. For front mounting			
Max. number of blocks in holder / **Included blocks**			
For non-illuminated operators			
3 / 1 NC	**MCBH-01**	1SFA 611 605 R1110	0.019
3 / 1 NO	**MCBH-10**	1SFA 611 605 R1101	0.019
3 / 2 NC	**MCBH-02**	1SFA 611 605 R1120	0.032
3 / 2 NO	**MCBH-20**	1SFA 611 605 R1102	0.032
3 / 3 NC	**MCBH-03**	1SFA 611 605 R1130	0.045
3 / 3 NO	**MCBH-30**	1SFA 611 605 R1103	0.045
3 / 1 NO + 1 NC	**MCBH-11**	1SFA 611 605 R1111	0.032
3 / 1 NO + 2 NC	**MCBH-12**	1SFA 611 605 R1121	0.045
3 / 2 NO + 1 NC	**MCBH-21**	1SFA 611 605 R1112	0.045
For illuminated operators			
3 / 1 NC + 1 LB	**MCBH-011**	1SFA 611 605 R1210	0.034
3 / 1 NO + 1 LB	**MCBH-101**	1SFA 611 605 R1201	0.034
3 / 1 NO + 1 NC + 1 LB	**MCBH-111**	1SFA 611 605 R1211	0.047
3 / 2 NC + 1 LB	**MCBH-021**	1SFA 611 605 R1220	0.047
3 / 2 NO + 1 LB	**MCBH-201**	1SFA 611 605 R1202	0.047
Single contact blocks. For front mounting			
1 NO	**MCB-10**	1SFA 611 610 R1001	0.013
1 NC	**MCB-01**	1SFA 611 610 R1010	0.013
1 NO with gold plated contacts	**MCB-10G**	1SFA 611 610 R1101	0.013
1 NC with gold plated contacts	**MCB-01G**	1SFA 611 610 R1110	0.013
Double contact block. For front mounting To be used together with MCBH5-00 when contact blocks in position 4- and 5- are needed. Also when using MCBH-00 together with selector switch and contact block in positioon 3- is needed			
2 NO	**MCB-20**	1SFA 611 610 R1002	0.026
2 NC	**MCB-02**	1SFA 611 610 R1020	0.026
1 NO + 1 NC	**MCB-11**	1SFA 611 610 R1011	0.026
Single lamp blocks for front mounting, Ba 9s base			
For max. 2 W, 230 V AC and DC filament bulb or LED	**MLB-1**	1SFA 611 620 R1001	0.015
115 V AC supply voltage. **For 60 V filament bulb max. 1.2 W**	**MLB-2**	1SFA 611 620 R1002	0.017
230 V AC supply voltage. **For 130 V filament bulb max. 2 W**	**MLB-3**	1SFA 611 620 R1003	0.020
115 V AC and DC supply voltage **For 24 V LED**	**MLB-4**	1SFA 611 620 R1004	0.017
24 V AC and DC supply voltage. With resistor. Intended for electronic circuits. The resistor limits the making current and protects against distur. bances in the electronic circuit **For 24 V filament bulb**	**MLB-5**	1SFA 611 620 R1005	0.017
Holders			
Holders for front mounting For three blocks	**MCBH-00**	1SFA 611 605 R1100	0.006
For five blocks	**MCBH5-00**	1SFA 611 601 R1100	0.008





Description	Type	Order Code	Weight, kg

Filament bulbs Ba 9s base Type of current: AC/DC. A lamp changing tool is required for changing bulb.

Rated voltage V	Rated current mA	Rated output W	Service life h	Luminance mcd			
6	200	1.2	10 000	350		**5911 086-11**	0.002
12	100	1.2	10 000	230		**5911 086-12**	0.002
24	50	1.2	10 000	280		**5911 086-13**	0.002
30	40	1.2	10 000	250		**5911 086-4**	0.002
48	42	2	6 000	500		**5911 086-5**	0.002
60	20	1.2	5 000	190		**5911 086-14**	0.002
110	18	2	7 500	250		**5911 086-7**	0.002
130	15	2	7 500	120		**5911 086-15**	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 (+)

Color	Rated current mA	Wave-length nm	Luminance mcd			
Rated voltage 12 V, DC Service life >50 000 h						
Red	15	630	250	**KA2-2011**	1SFA 616 921 R2011	0.005
Green	15	525	1000	**KA2-2012**	1SFA 616 921 R2012	0.005
Yellow	15	592	250	**KA2-2013**	1SFA 616 921 R2013	0.005
Blue	15	470	450	**KA2-2014**	1SFA 616 921 R2014	0.005
White	15	x=0.31 y=0.32	600	**KA2-2015**	1SFA 616 921 R2015	0.005
Rated voltage 24 V, (AC)/DC [1] Service life >50 000 h						
Red	15	630	250	**KA2-2021**	1SFA 616 921 R2021	0.005
Green	15	525	800	**KA2-2022**	1SFA 616 921 R2022	0.005
Yellow	15	592	250	**KA2-2023**	1SFA 616 921 R2023	0.005
Blue	15	470	400	**KA2-2024**	1SFA 616 921 R2024	0.005
White	15	x=0.31 y=0.32	500	**KA2-2025**	1SFA 616 921 R2025	0.005
Rated voltage 48 V, (AC)/DC [1] Service life >50 000 h						
Red	12	630	200	**KA2-2041**	1SFA 616 921 R2041	0.005
Green	12	525	1700	**KA2-2042**	1SFA 616 921 R2042	0.005
Yellow	12	592	240	**KA2-2043**	1SFA 616 921 R2043	0.005
Blue	12	470	720	**KA2-2044**	1SFA 616 921 R2044	0.005
White	12	x=0.31 y=0.32	1200	**KA2-2045**	1SFA 616 921 R2045	0.005
Rated voltage 60 V, (AC)/DC [1] Service life >50 000 h						
Red	10	630	160	**KA2-2051**	1SFA 616 921 R2051	0.005
Green	10	525	1400	**KA2-2052**	1SFA 616 921 R2052	0.005
Yellow	10	592	200	**KA2-2053**	1SFA 616 921 R2053	0.005
Blue	10	470	600	**KA2-2054**	1SFA 616 921 R2054	0.005
White	10	x=0.31 y=0.32	1000	**KA2-2055**	1SFA 616 921 R2055	0.005
Rated voltage 110-130 V, AC [1] Service life 25 000 h						
Red	4-6	630	60-100	**KA2-2131**	1SFA 616 921 R2131	0.005
Green	4-6	525	500-850	**KA2-2132**	1SFA 616 921 R2132	0.005
Yellow	4-6	592	70-120	**KA2-2133**	1SFA 616 921 R2133	0.005
Blue	4-6	470	220-350	**KA2-2134**	1SFA 616 921 R2134	0.005
White	4-6	x=0.31 y=0.32	350-600	**KA2-2135**	1SFA 616 921 R2135	0.005
Rated voltage 110-130 V, AC/DC [1] Service life 25 000 h						
Red	4-6	630	60-100	**KA2-2141**	1SFA 616 921 R2141	0.005
Green	4-6	525	500-850	**KA2-2142**	1SFA 616 921 R2142	0.005
Yellow	4-6	592	70-120	**KA2-2143**	1SFA 616 921 R2143	0.005
Blue	4-6	470	220-350	**KA2-2144**	1SFA 616 921 R2144	0.005
White	4-6	x=0.31 y=0.32	350-600	**KA2-2145**	1SFA 616 921 R2145	0.005
Rated voltage 230 V, AC [1] Service life 25 000 h						
Red	4	630	60	**KA2-2221**	1SFA 616 921 R2221	0.005
Green	4	525	500	**KA2-2222**	1SFA 616 921 R2222	0.005
Yellow	4	592	70	**KA2-2223**	1SFA 616 921 R2223	0.005
Blue	4	470	220	**KA2-2224**	1SFA 616 921 R2224	0.005
White	4	x=0.31 y=0.32	350	**KA2-2225**	1SFA 616 921 R2225	0.005

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

Pilot devices, Ø 22 mm – Accessories



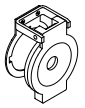














Description	Type	Order Code	Weight, kg
Flashing LED			
A lamp changing tool is required for changing bulb. Choose the same color for the LED and the lamp cap or use a clear lamp cap. The lamp base has to be connected to cathode (-) and the bottom contact to anode (+).			
Rated voltage 24 V, rated current 25 mA, DC			
Color / Wave length nm / Service life hours			
Red 630 50 000		**4950 512-1**	0.005
Green 565 50 000		**4950 512-2**	0.005
Yellow 585 50 000		**4950 512-3**	0.005
Lamp changing tool			
For LEDs and for bulbs	**KA1-8072**	1SFA 616 920 R8072	0.002
Mounting tool			
Grey. Used for tightening the sleeve	**MA1-8015**	1SFA 611 920 R8015	0.021
Membrane of rubber			
Of transparent, heat and cold resistant rubber. Does not harden at low temperature. Gives IP 67 degree of protection. When membrane is used, remove the gasket.			
For flush button	**KA1-8052**	1SFA 616 920 R8052	0.002
For extended button	**KA1-8002**	1SFA 616 920 R8002	0.002
Emergency stop shroud Not for use with plastic enclosure			
For 40 mm Emergency Stop Pushbuttons. To prevent inadvertant operation. Yellow	**KA1-8053**	1SFA 616 920 R8053	0.020
Protective ring			
For flush and extended buttons 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.	**KA1-8010**	1SFA 616 920 R8010	0.008
Bezel (Packing unit 10 pieces)			
For pushbutton			
Grey, plastic	**KA1-8079**	1SFA 616 920 R8079	0.025
Black, plastic	**KA1-8022**	1SFA 616 920 R8022	0.025
Metal	**KA1-8021**	1SFA 616 920 R8021	0.025
For modular selector switch			
Grey, plastic	**KA1-8077**	1SFA 616 920 R8077	0.020
Black, plastic	**KA1-8080**	1SFA 616 920 R8080	0.025
Metal	**KA1-8024**	1SFA 616 920 R8024	0.025
For compact selector switch			
Grey	**CA1-8076**	1SFA 619 920 R8076	0.001
Black	**CA1-8077**	1SFA 619 920 R8077	0.001
Metal	**CA1-8078**	1SFA 619 920 R8078	0.005
Locking nut (Packing unit 10 pieces)			
For modular range		1SFA 611 920 R8019	0.001

Pilot devices, Ø 22 mm – Accessories







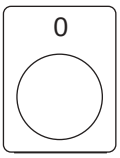




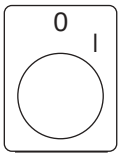
Description	Type	Order Code	Weight. kg
30 mm adaptors			
For use when fitting the 22 mm pilot devices in 30 mm mounting holes. (1.5 – 4 mm panels)			
For use with modular emergency stop pushbuttons			
Black plastic.	**KA1-8027**	1SFA 616 920 R8027	0.007
Metal.	**KA1-8028**	1SFA 616 920 R8028	0.021
For use with modular and compact pushbuttons, selector switches, pilot lights and for potentiometers, buzzers and compact emergency stop pushbuttons			
Black plastic.	**KA1-8029**	1SFA 616 920 R8029	0.010
Metal.	**KA1-8030**	1SFA 616 920 R8030	0.035
Adaptors			
For flush mounted modular and compact pushbutton	**KA1-8073**	1SFA 616 920 R8073	0.050
For flush mounted modular selector switches	**KA1-8074**	1SFA 611 920 R8074	0.046
For flush mounted compact selector switches	**CA1-8075**	1SFA 619 920 R8075	0.046
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
Label sheet			
For marking of contact blocks at two levels		**2949 1725-1**	0.001
Lenses for pilot lights (Packing unit 10 pieces)			
Red	**KA1-8031**	1SFA 616 920 R8031	0.02
Green	**KA1-8032**	1SFA 616 920 R8032	0.02
Yellow	**KA1-8033**	1SFA 616 920 R8033	0.02
Blue	**KA1-8034**	1SFA 616 920 R8034	0.02
White	**KA1-8035**	1SFA 616 920 R8035	0.02

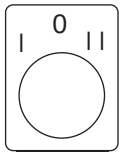
Pilot devices, Ø 22 mm – Accessories

Legend plates



H=39 mm W=29,6 mm

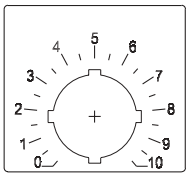








Symbol plate
29.6 x 44.5 mm

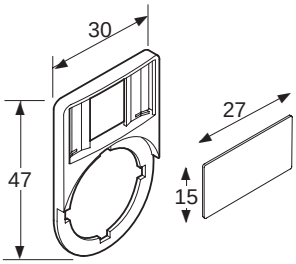


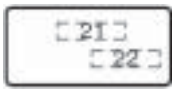
Width 48.5 mm
Height 44.5 mm

Description	Order Code	Weight. kg
Legend plate		
Engraved fixed plates with of silver-grey aluminium. Black text		
For pushbutton		
Symbol/text		
O	**SK 615 550-61**	0.002
Start	**SK 615 550-44**	0.002
Stop	**SK 615 552-31**	0.002
For two-position selector switch		
Symbol/text		
Centre Right		
O I	**SK 615 550-75**	0.002
Stop Start	**SK 615 552-55**	0.002
For three-position selector switch		
Symbol/text		
Left Centre Right		
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:		
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:		
Symbol plate	**SK 615 562-87**	0.002
Scale 0 - 10	**SK 615 562-88**	0.002

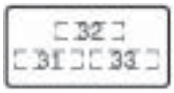
Pilot devices, Ø 22 mm – Accessories

Legend plates





For two-position. selector switch

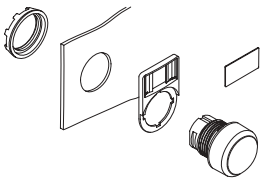


For three-position selector switch



Legend plate holders with inserts

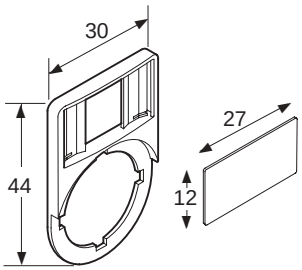
- Holder of black plastic.
- Insert of brushed aluminium on black plastic. The insert is securely retained in a pocket and can be removed.
3 mm high text in typeface Helvetica.



Description	Type	Order Code	Weight, kg
Legend plate holder (black)			
Black	**KA1-8120**	**1SFA 616 920 R8120**	0.002
Inserts			
Of brushed aluminium on black plastic			
Without text or symbol	**KA1-8121**	**1SFA 616 920 R8121**	0.001
Inserts with text/symbol			
Of brushed aluminium on black plastic			
With text or symbol			
O	**MA6-1032**	**1SFA 611 930 R1032**	0.001
I	**MA6-1033**	**1SFA 611 930 R1033**	0.001
→	**MA6-1034**	**1SFA 611 930 R1034**	0.001
→→	**MA6-1035**	**1SFA 611 930 R1035**	0.001
Close	**MA6-1036**	**1SFA 611 930 R1036**	0.001
Open	**MA6-1037**	**1SFA 611 930 R1037**	0.001
On	**MA6-1038**	**1SFA 611 930 R1038**	0.001
Off	**MA6-1039**	**1SFA 611 930 R1039**	0.001
Fast	**MA6-1040**	**1SFA 611 930 R1040**	0.001
Slow	**MA6-1041**	**1SFA 611 930 R1041**	0.001
Down	**MA6-1042**	**1SFA 611 930 R1042**	0.001
Up	**MA6-1043**	**1SFA 611 930 R1043**	0.001
Start	**MA6-1044**	**1SFA 611 930 R1044**	0.001
Stop	**MA6-1045**	**1SFA 611 930 R1045**	0.001
Inserts for two-position selector switches			
Of brushed aluminium on black plastic			
With text or symbol			
Pos. 21 / Pos. 22			
O / I	**MA6-1070**	**1SFA 611 930 R 1070**	0.001
I / II	**MA6-1071**	**1SFA 611 930 R 1071**	0.001
→ / →→	**MA6-1072**	**1SFA 611 930 R 1072**	0.001
Off / On	**MA6-1073**	**1SFA 611 930 R 1073**	0.001
Stop / Start	**MA6-1074**	**1SFA 611 930 R 1074**	0.001
Low / High	**MA6-1075**	**1SFA 611 930 R 1075**	0.001
Slow / Fast	**MA6-1076**	**1SFA 611 930 R 1076**	0.001
Close / Open	**MA6-1077**	**1SFA 611 930 R 1077**	0.001
Jog / Run	**MA6-1078**	**1SFA 611 930 R 1078**	0.001
Hand / Auto	**MA6-1079**	**1SFA 611 930 R 1079**	0.001
Inserts for three-position selector switches			
Of brushed aluminium on black plastic			
With text or symbol			
Pos. 31 / Pos. 32 / Pos. 33			
← / O / →	**MA6-1080**	**1SFA 611 930 R 1080**	0.001
→ / O / →→	**MA6-1081**	**1SFA 611 930 R 1081**	0.001
I / O / II	**MA6-1082**	**1SFA 611 930 R 1082**	0.001
Hand / O / Auto	**MA6-1083**	**1SFA 611 930 R 1083**	0.001
Slow / Off / Fast	**MA6-1084**	**1SFA 611 930 R 1084**	0.001
Inserts with customer-selected text/symbols [1]			
Of brushed aluminium on black plastic			
With text	**MA6-1090**	**1SFA 611 930 R 1090**	0.001

When ordering state (in addition to Order Code)
Text line: Pos. 11 or 12 - max 11 characters per line
Pos. 31 - max 5 characters per line
Pos. 21 or 32 - max 5 characters
Pos. 22 or 33 - max 5 characters

[1] Text height 3 mm. Only the initial character is upper case unless other is stated



Legend plate holders with inserts – for plastic enclosures

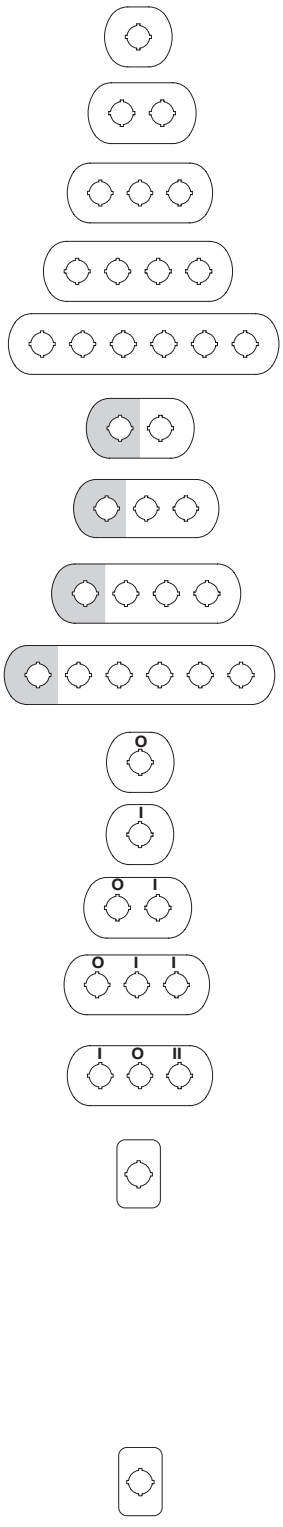
- Holder of grey plastic.
- Insert of brushed aluminium on black plastic.
The insert is securely retained in a pocket and can be removed.

3 mm high text in typeface Helvetica.

Description	Type	Order Code	Weight, kg
Legend plate holder (grey) for plastic enclosures			
Grey	**MA6-1060**	**1SFA 611 930 R1060**	0.002
Inserts			
Of brushed aluminium on black plastic			
Without text or symbol	**MA6-1061**	**1SFA 611 930 R1061**	0.001
Inserts with text/symbol			
Of brushed aluminium on black plastic			
With text or symbol			
O	**MA6-1062**	**1SFA 611 930 R1062**	
I	**MA6-1063**	**1SFA 611 930 R1063**	0.001
II	**MA6-1064**	**1SFA 611 930 R1064**	0.001

Pilot devices - Accessories

Special legend plates for plastic enclosures



Description	Type	Order Code	Weight, kg
Legend plates for plastic enclosures			
Of silvergrey aluminium.			
1-seat	**MA6-1000**	**1SFA 611 930 R1000**	0.004
2-seat	**MA6-1002**	**1SFA 611 930 R1002**	0.006
3-seat	**MA6-1003**	**1SFA 611 930 R1003**	0.008
4-seat	**MA6-1004**	**1SFA 611 930 R1004**	0.010
6-seat	**MA6-1005**	**1SFA 611 930 R1005**	0.012

Legend plates for plastic enclosures			
Of silvergrey aluminium.(Pos. 1 Yellow)			
2-seat	**MA6-1006**	**1SFA 611 930 R1006**	0.006
3-seat	**MA6-1007**	**1SFA 611 930 R1007**	0.008
4-seat	**MA6-1008**	**1SFA 611 930 R1008**	0.010
6-seat	**MA6-1009**	**1SFA 611 930 R1009**	0.012

Symbol/Text Pos 1 2 3	Type	Order Code	Weight, kg
Legend plates for plastic enclosures			
Of silvergrey aluminium.			
1-seat			
O	**MA6-1012**	**1SFA 611 930 R1012**	0.004
1-seat			
I	**MA6-1013**	**1SFA 611 930 R1013**	0.004
2-seat			
O I	**MA6-1014**	**1SFA 611 930 R1014**	0.006
3-seat			
O I I	**MA6-1015**	**1SFA 611 930 R1015**	0.008
3-seat			
I O II	**MA6-1016**	**1SFA 611 930 R1016**	0.008

Desciption/Text	Type	Order Code	Weight, kg
Emergency stop legend plate			
Black text on an yellow aluminium plate.			
Legend plate without text	**MA6-1010**	**1SFA 611 930 R1010**	
Legend plate (1SFA 611 930 R1010) with text:			
Nöd stopp	**MA6-1017**	**1SFA 611 930 R1017**	0.005
Not Aus	**MA6-1018**	**1SFA 611 930 R1018**	0.005
Emergency Stop	**MA6-1019**	**1SFA 611 930 R1019**	0.005
ARRET D'URGENCE	**MA6-1020**	**1SFA 611 930 R1020**	0.005
Hätäseis	**MA6-1021**	**1SFA 611 930 R1021**	0.005
PARADA DE EMERGENCIA	**MA6-1022**	**1SFA 611 930 R1022**	0.005
Black text on an yellow plastic plate.			
Legend plate without text	**MA6-1011**	**1SFA 611 930 R1011**	0.002
Legend plate (1SFA 611 930 R1011) with text:			
Emergency Stop	**MA6-1023**	**1SFA 611 930 R1023**	0.002

Certifications and Approvals

The pushbuttons, selector switches and pilot lights are approved by:
- National approval agencies: UL and China Compulsory Product Certification
- Marine classifications: Det Norske Veritas and Germanische Lloyd

For detail information please contact ABB

E 57057

Standards

IEC 60947-1	Low-voltage switchgear and controlgear - Part 1: General rules
IEC 60947-5-1	Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices
IEC 60947-5-5	Low-voltage switchgear and controlgear - Part 5-5: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function
IEC 60073	Basic and safety principles for man-machine interface, marking and identification - Coding principles for indicators and actuators
IEC 60529	Degrees of protection provided by enclosures (IP Code)
EN 60947-1	Low-voltage switchgear and controlgear - Part 1: General rules
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EN 60529	Degrees of protection provided by enclosures (IP Code)
EN 50013	Low-voltage switchgear and controlgear for industrial use - Terminal marking and distinctive number for particular control switches
UL 508	Industrial Control Equipment
CSA C22.2 No 14	Industrial Control Equipment

Degrees of protection

Operators	**IP**	**UL/CSA**
Pushbutton with flush or extended button, **MP**	IP 66	Type 1, 3R, 4, 4X, 12, 13
Double pushbutton, **MPD**	IP 66	Type 1, 3R, 4, 4X, 12, 13
Mushroom pushbutton, momentary, **MPM**	IP 66	Type 1, 3R, 4, 4X, 12, 13
Emergency stop pushbutton, **MPMT/P**	IP 66	Type 1, 3R, 4, 4X, 12, 13
Selector switch, **M2SS/M3SS**	IP 66	Type 1, 3R, 4, 4X, 12, 13
Key operated selector switch, **M2SSK/M3SSK**	IP 66	Type 1, 3R, 4, 4X, 12
Toggle switch, **MTS2/MTS3**	IP 66	Type 1, 3R, 4, 4X, 12, 13
Definite purpose pushbutton, 30 mm, **KP6**	IP 66	–
Reset button, **KPR**	IP 66	Type 1, 3R, 4, 4X, 12, 13
Pilot lights, **ML**	IP 66	Type 1, 3R, 4, 4X, 12, 13
Buzzer, **KB**	IP 65	Type 4X
Potentiometer, **KT**	IP 66	Type 1, 3R, 4, 4X, 12, 13
Contact block and transformer block	IP 20	
Enclosures		
Plastic enclosures	IP 66	
Metallic enclosures	IP 67	

Material

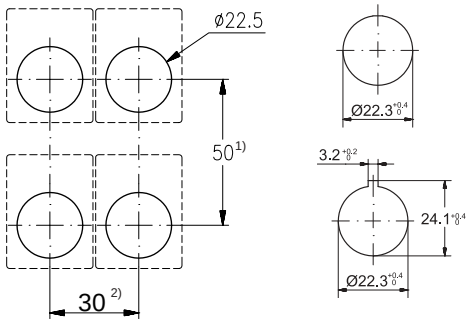
No ozone depleting substances in the products.

All front parts are made of polycarbonate

Material

PC	Polycarbonate	High impact strength, good outdoor resistance. Can withstand light acid solutions, aliphatic hydrocarbons, paraffin, alcohols, animal and vegetable greases.
PSU	Polysulphone	Can withstand high temperatures, acids, basic solutions, alkaline compounds, oils, alcohols.
PA	Polyamide	Can withstand high temperatures, aliphatic, aromatic and chlorinated hydrocarbons, esters, ketone-aldehydes, alcohols and basic solutions.
PBT		Can withstand temperature, aliphatic and aromatic hydrocarbons, acids, basic solutions, alcohols, grease and oils
Zinc		Good corrosion resistance in inland-, sea and industrial atmosphere.
Light-alloy		Good corrosion resistance in inland-, sea and industrial atmosphere.
Rubber		Chloroprene Nitrile

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,

Mechanical life

Operators

Pushbuttons with flush or extended button, momentary mushroom push-button	2 million operations
Selector switch, maintained mushroom pushbutton, key operated selector switch and double pushbutton	0.5 million operations
Emergency stop pushbutton	0.1 million operations
Toggle switch	1 million operations
Lockable pushbuttons	0.3 million operations

Temperature

Ambient temperature during operation	-25 to +70 °C
Storage temperature	-30 to +85 °C

Terminals

Plus-minus Pozidriv No.2 screw with DIN-washer.

Connectable area	min. 1 x 0.5 mm²/AWG 20 max. 2 x 2.5 mm²/2 x AWG14
Recommended torque	0.9 Nm

Tightening torque

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

Contact blocks

Mechanical endurance	10 million operations

Self cleaning contacts of silver, NC contact with positive opening. At voltages and currents below 24 V and 5.6 mA two contact blocks in parallel are recommended. As an alternative, gold plated contacts can be used.

Ratings as per UL, CSA, NEMA		**A600** AC		**Q600** DC
Rated insulation voltage		600 V		600 V
Rated thermal current		10 A		2.5 A
Rated operational current	at 120 V	6 A	at 125 V	0.55 A
	240 V	3 A	250 V	0.27 A
	480 V	1.5 A	480 V	0.10 A
	600 V	1.2 A	600 V	0.10 A

Ratings as per IEC 60 947-5-1		
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 mΩ
Compulsory function test	at	5V, 16 mA

Max. number of contact blocks per operator [1]	
Pushbutton, toggle switch and mushroom pushbutton	6
Maintained pushbutton	4
Double pushbutton, selector switch, key operated selector switch and emergency stop pushbutton	4

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

[1] The contact blocks can be stacked in max. two levels on the 3- block holder. Only one level is accepted on the 5-block holder.

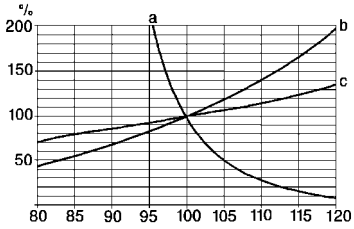
Lamp block

Ratings as per IEC 60 947-5-1	
Rated insulation voltage	230 V
Base	Ba 9s
Permissible power, up to	2 W

Service life of filament bulb

Relative service life, luminous flux and power consumption at different service voltages.
It is generally true to say that bulbs for lower voltages give more light and have better vibration-withstand capability than bulbs for higher voltages.

Service life



a = service life (H)
b = luminous flux (lm)
c = power (W)
U_d = service voltage, V
U_m = bulb voltage (V)

Lamp comparisation

Bulb type	Approx. service life (hours)	Shock and vibration immunity	High operating temperature	Low power consumption	Brightness
Filament	5000 - 10 000	+	+	+	+++
LED	25 000 - 50 000	+++	++	++	++

Very good +++
Good ++
Less good +

Transformer block

Suitable for filament bulb 6 or 24 V AC and 1.2 W and LED 24 V.

Rated power	1.5 W
Rated voltage	Ratio, see Accessories page ??
Rated insulation voltage acc. to IEC 70 °C (DT)	Class E

E 57057

Approvals

The pushbuttons, selector switches and pilot lights are approved by:
- National approval agencies: UL and China Compulsory Product Certification

For detail information please contact ABB

Standards

IEC 60947-1	Low-voltage switchgear and controlgear - Part 1: General rules
IEC 60947-5-1	Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices
IEC 60947-5-5	Low-voltage switchgear and controlgear - Part 5-5: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function
IEC 60073	Basic and safety principles for man-machine interface, marking and identification - Coding principles for indicators and actuators
IEC 60529	Degrees of protection provided by enclosures (IP Code)
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EN 50013	Low-voltage switchgear and controlgear for industrial use - Terminal marking and distinctive number for particular control switches
UL 508	Industrial Control Equipment
CSA C22.2 No 14	Industrial Control Equipment

Degrees of protection

Pilot device:	**IP**	**UL/CSA**
Compact pushbutton, **CP1, CP2, CP3, CP4**	IP66	Type 1, 3R, 4, 4X, 12, 13
Compact selector switch, **C2SS, C3SS**	IP66	Type 1, 3R, 4, 4X, 12, 13
Compact pilot light, **CL**	IP66	Type 1, 3R, 4, 4X, 12, 13
Compact emergency stop pushbutton, **CE3T,CE3P, CE4T, CE4P, CE3K1, CE4K1**	IP66	Type 1, 3R, 4, 4X, 12, 13
Terminals	IP20	

Temperature

Ambient temperature during operation	-25 to +70 °C
Storage temperature	-30 to +85 °C

Tightening torque

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

Contacts

Ratings as per UL, CSA, NEMA	**C300**	**R300**
Rated insulation voltage	250 V	250 V
Rated thermal current	2.5 A	1 A
Rated operational current		
at 120 V	1.5 A	
125 V		0.22 A
240 V	0.75 A	
250 V		0.11 A
Ratings as per IEC 60947-5-1		
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	
Tightening torque		
compact pushbutton & selector switch	0.8 Nm (M3)	
compact pilot light	0.9 Nm (M3.5)	
compact emergency stop pushbutton	0.8 Nm (M3)	
Terminals		
Plus-minus Pozidriv No. 2		
Compact pushbutton		
Compact selector switch		
Compact emergency stop		
Connectable area	min. 1 x 0.5 mm^2/1 x AWG22 max. 2 x 1.5 mm^2/2 x AWG14	
Compact pilot light		
Connectable area	min. 1 x 0.5 mm^2/1 x AWG20 max. 2 x 2.5 mm^2/2 x AWG14	

Material

No ozone depleting substances in the products.
All front parts are made of polycarbonate

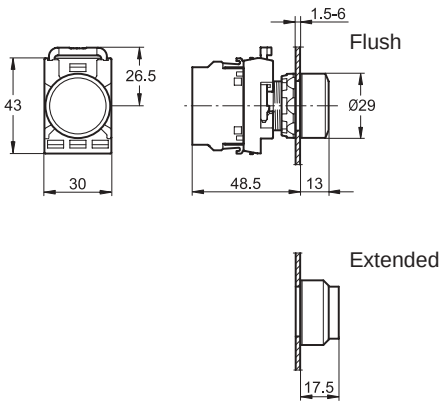
Material		*Characteristics*
PC	Polycarbonate	High impact strength, good outdoor resistance. Can withstand light acid solutions, aliphatic hydrocarbons, paraffin, alcohols, animal and vegetable greases.
PA	Polyamide	Can withstand high temperatures, aliphatic, aromatic and chlorinated hydrocarbons, esters, ketone-aldehydes, alcohols and basic solutions.
PBT		Can withstand temperature, aliphatic and aromatic hydrocarbons, acids, basic solutions, alcohols, grease and oils
Zinc		Good corrosion resistance in inland-, sea and industrial atmosphere.
Light-alloy		Good corrosion resistance in inland-, sea and industrial atmosphere.
Rubber		Chloroprene Nitrile

Pilot devices, Ø 22 mm

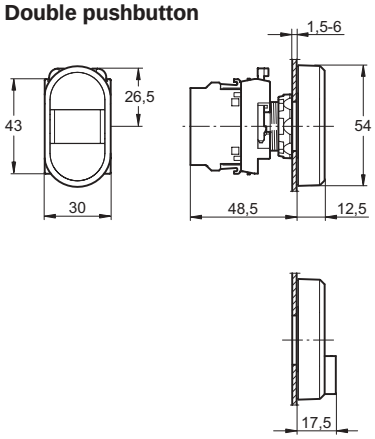
Dimensions

Modular range

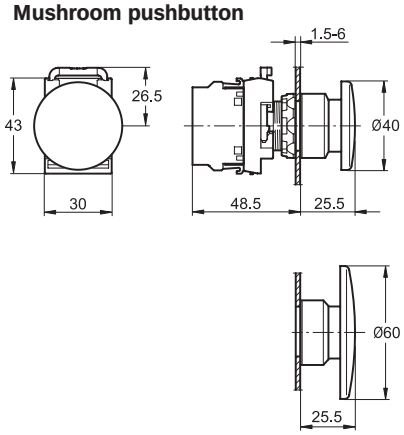
Pushbutton



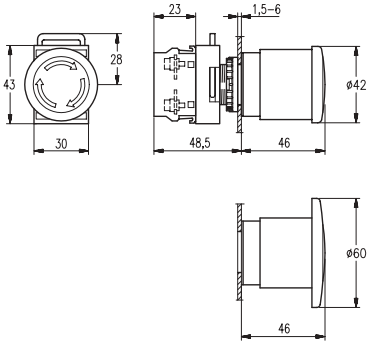
Double pushbutton



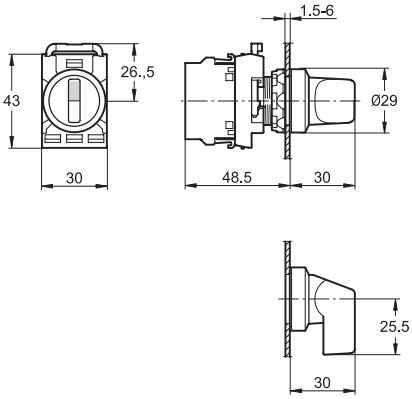
Mushroom pushbutton



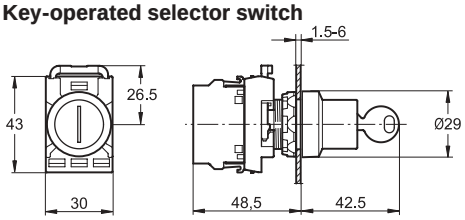
Emergency stop pushbutton



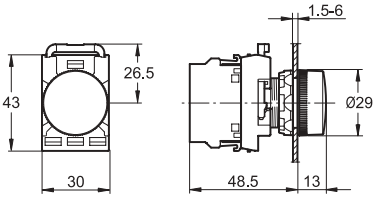
Selector switch



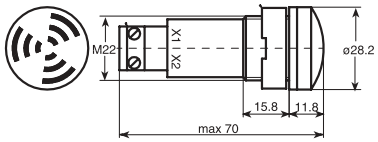
Key-operated selector switch



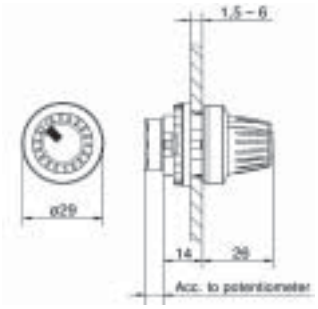
Pilot light



Buzzer

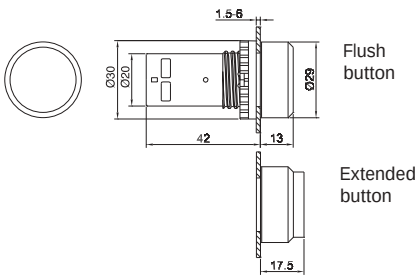


Potentiometer

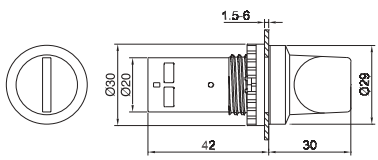


Compact range

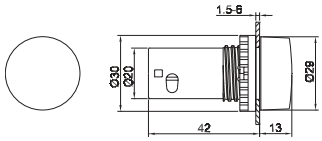
Pushbutton



Selector switch



Pilot light



Dimensions in mm.

Drilling plans for modular and compact pilot devices See page 25

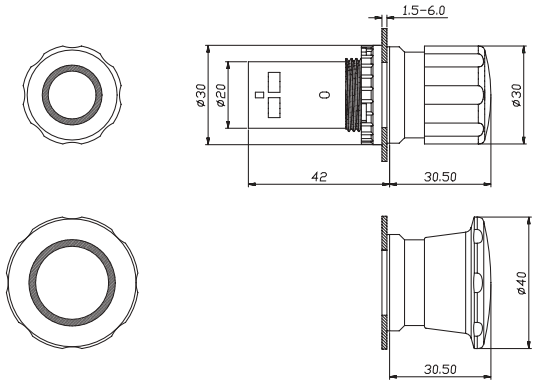
Pilot devices, Ø 22 mm

Dimensions

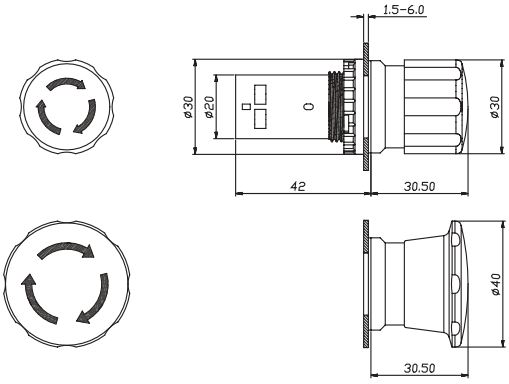
Compact range

Emergency stop pushbuttons

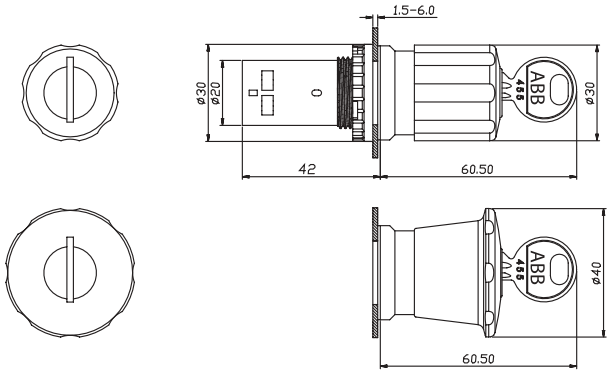
CE3P/CE4P (Pull release)



CE3T/CE4T (Twist release)



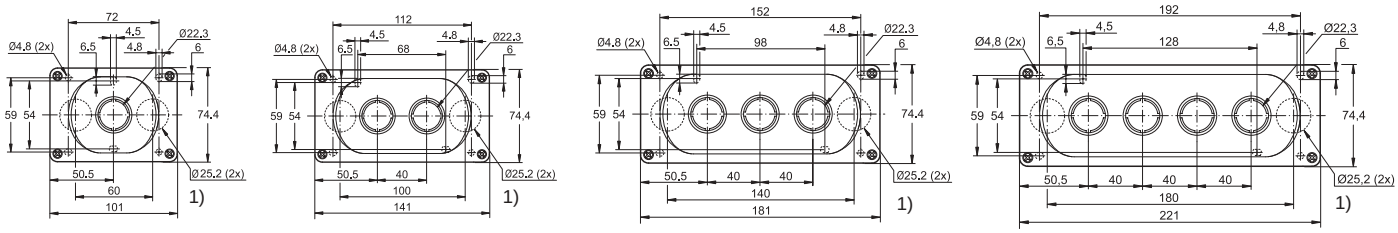
CE3K1/CE4K1

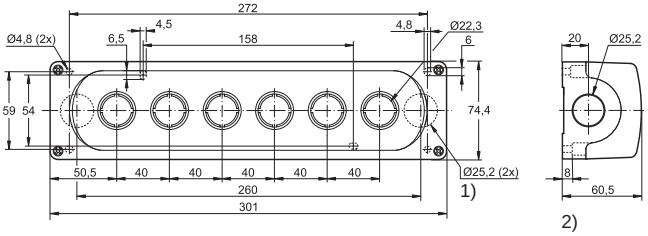


Enclosures

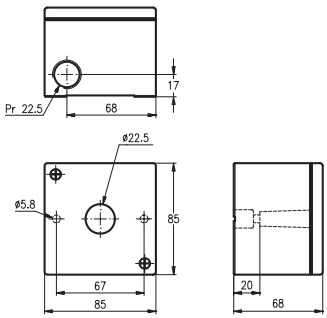
Plastic enclosures, 1, 2, 3, 4 and 6 seat

Dimensions in mm.





Metallic enclosure, 1 seat



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

Color selection according to IEC 60 073

IEC 60 073 specifies coding principles for indicators and actuators and gives recommendation regarding the use of colors. An excerpt from the standard is given below. For detailed information, see the standard.

Choice of colors

The general principles for the meaning of colors for the indication of information are given in table below

Meaning of colors – General principles

Color	Meaning		
	Safety of persons or environment	Condition of process	State of equipment
RED	Danger	Emergency	Faulty
YELLOW	Warning/caution	Abnormal	Abnormal
GREEN	Safe	Normal	Normal
BLUE	Mandatory significance		
WHITE, GREY, BLACK	No specific meaning assigned		

Non-illuminated actuators

Emergency actuators

EMERGENCY-STOP / OFF actuators shall be identified by the color **RED**

STOP / OFF actuators

WHITE, **GREY** and **BLACK** are the preferred colors for STOP / OFF actuators, with the main preference being for BLACK. RED is also permitted. GREEN shall not be used.

START / ON actuators

WHITE, **GREY** and **BLACK** are the preferred colors for START / ON actuators, which cause the closing of switching devices and the equipment to start, with the main preference being for WHITE. GREEN is also permitted. RED shall not be used.

Use of WHITE and BLACK for specific meanings

Where the colors WHITE and **BLACK** are used to distinguish between START / ON and STOP / OFF actuators, then the color WHITE shall be used for START / ON actuators and the color **BLACK** shall be used for STOP / OFF actuators.

The same actuators serving for START and STOP or ON and OFF

WHITE, **GREY** and **BLACK** are the preferred colors for actuators which, when actuated several times, act alternately as a START / ON and STOP / OFF actuator.
The colors YELLOW and GREEN shall not be used. The color **RED** shall be used only in cases where the same actuator, other than a push-button, is used for both EMERGENCYSTOP / OFF and normal operation.

WHITE, **GREY** and **BLACK** are preferred colors for actuators which cause a movement while they are actuated and stop the movement when they are released (such as inching or jogging actuators). **GREEN** is also permitted. RED shall not be used.

RESET actuators

RESET actuators (used, for example, with protective relays) shall be **BLUE**, WHITE, **GREY** or **BLACK**, except RESET actuators which also act as STOP / OFF actuators. The color of such STOP / OFF actuators shall be in accordance with
STOP / OFF actuators above.

Pilot devices, 22 mm

Explanantion of type codes

Explanation of type code

Modular Pilot Devices

Pilot light

Example 1: **Type ML1-100R**

L1	Pilot **L**ight Head

Lens color:
R = **R**ed **W** = **W**hite
G = **G**reen **C** = **C**lear
Y = **Y**ellow
L = **B**lue

Operators

Example 2: **Type MP1-10Y**

P	**P**ushbutton
PD	**P**ushbutton, **D**ouble
PK	**P**ushbutton, **K**ey-lockable
PM	**P**ushbutton, **M**ushroom
PMT	**P**ushbutton, **M**ushroom, **T**wist release
PMP	**P**ushbutton, **M**ushroom, **P**ull release
2SS	**2**-pos. **S**elector **S**witch
3SS	**3**-pos. **S**elector **S**witch
KB	Buzzer
KT	Potentiometer

Button color:
R = **R**ed **W**= **W**hite
G = **G**reen **B** = **B**lack (non-illuminated only)
Y = **Y**ellow **C** = **C**lear
L = Blue **U** = Grey (non-illuminated only)

Lens color for double pushbuttons:
R = **R**ed
G = **G**reen
Y = **Y**ellow
C = **C**lear
B = **B**lack (non-illuminated only

Example 3: **Type M2SSK1-101**

2SSK	**2**-pos. **S**elector **S**witch, **K**ey-lockable
3SSK	**3**-pos. **S**elector **S**witch, **K**ey-lockable
PK	**P**ushbutton, **K**ey-lockable

Key code :
1 = **71**
2 = **72**
3 = **73**

Buzzer, contact blocks, lamp block

Example 4: **Type MCBH-10**

B	**B**uzzer
CB	**C**ontact **B**lock
CBH	**C**ontact **B**lock with **H**older
LB	**L**amp **B**lock

Contact blocks:
10 1 NO
01 1 NC
11 1 NO +1 NC
02 2 NC
20 2 NO

M= "Generation" M, Modular range

Compact Pilot Devices

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

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

E	**E**mergency stop
L	Pilot **L**ight
P	Pushbutton
2SS	**2**-pos. **S**elector **S**witch
3SS	**3**-pos. **S**elector **S**witch

Button color/ Lens colour for compact pilot light and pushbuttons
R = **R**ed **W**= **W**hite
G = **G**reen **B** = **B**lack
Y = **Y**ellow **C** = **C**lear (pilot light only)
L = **B**lue **U** = **G**rey

Button color for compact selector switch
R = **R**ed
B = **B**lack
U = **G**rey

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 Automation Technologies AB/Cewe-Control
SE-721 61 Västerås, Sweden
Telephone +46 21 32 07 00
Telefax + 46 21 12 60 01

http://www.abb.com/lowvoltage

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