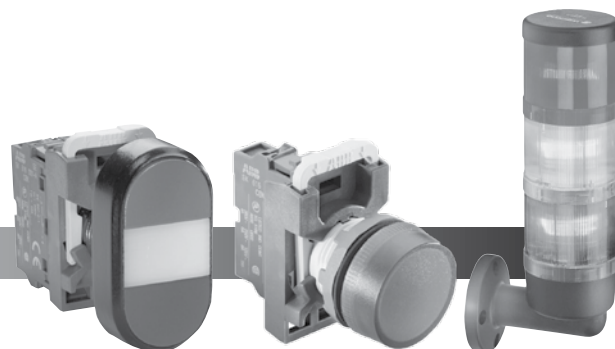


## 7 - Pilot devices



7

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#### General construction

- Snap-on feature reduces installation time
- Bezels: Black plastic, chrome metal. Grey plastic available as an option
- Contact block holder features rear mounting with quick-release locking mechanism for high security
- Buttons available in several colors
- Engraved text caps available
- Custom-specific markings on request
- UL File# E76003
- CSA File# LR19700

#### Operators

- Pushbuttons, illuminated and non-illuminated
- Double pushbuttons, illuminated and non-illuminated
- Mushroom pushbuttons, illuminated and non-illuminated, Ø 40 mm and Ø 60 mm
- Emergency stop pushbuttons, illuminated and non-illuminated, twist or pull release
- Selector switches, illuminated and non-illuminated, 2 or 3 position, short or long handle
- Key operated selector switches, 2 or 3 position
- Toggle switches, 2 or 3 position
- Joy sticks
- Extreme duty pushbuttons

#### Pilot lights

- Full voltage, resistor and transformer
- LED & filament bulbs available for illuminated pushbuttons and pilot lights

#### Contact blocks

- Quick-mount, quick-release contact block holder for fast and easy assembly
- NO & NC contact blocks are color coded for easy identification: Green = NO, Red = NC
- Silver tipped contacts
- Wiping action for high reliability
- Low energy gold plated contact blocks
- Base mounted contact blocks which snap onto a 35 mm DIN rail or into a plastic enclosure
- Contact block holder for three or five blocks in a single row

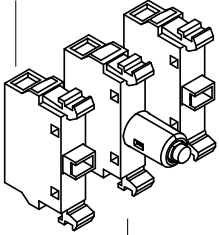
#### Additional products

- Buzzer, continuous and pulsating
- 5 kΩ and 10 kΩ potentiometers
- Definite purpose pushbuttons
- Reset pushbuttons
- Broad range of accessories

## Mounting

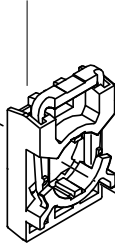
### Contact block

Single pole with making or breaking contact



### holder

Available either for three or five blocks in one single row. Additional blocks can be stacked on holders for three blocks.

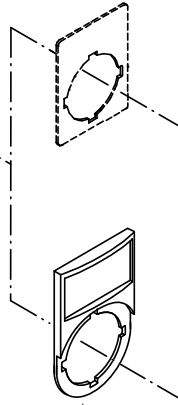


### Nut



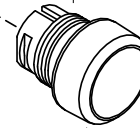
### Legend plates

Of aluminum with slots that guide the legend plate and the operator into the correct position. Please, see the chapter 'Legend plates' for more information.



### Operator

buttons, lenses and handles in several colors. Illuminated or non-illuminated.



### LED/lamp block

Illuminated pushbuttons, illuminated selector switches and pilot lights have a lamp block in the center position of the holder.

### Round or notched holes

Same actuator can be used in notched holes as well as in round holes.

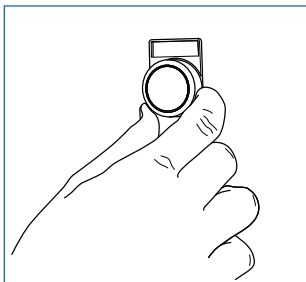
### Legend plate holder

Of black plastic. Insert of brushed aluminum. Please see the chapter 'Legend plates' for more information.

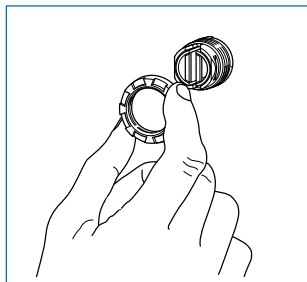
### bezels

pushbuttons, selector switches and toggle switches with bezel in black plastic, chrome plastic or chrome metal are available.

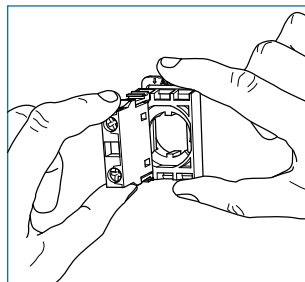
## Easy to install



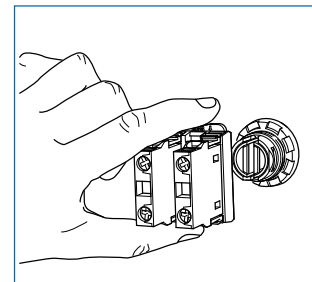
The operator is to be inserted from the front...



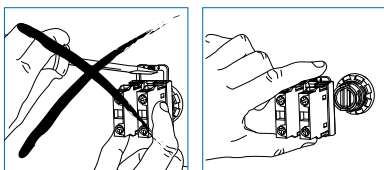
...and secured at the back with the nut.



The Contact blocks/lamp block are then snapped on to the holder...



...and the holder snaps on to the operator.



Press down the spring on the holder and pull the holder from the actuator.

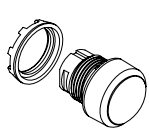


# Contact block combinations

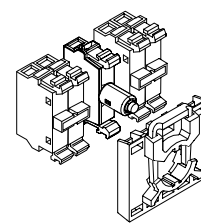
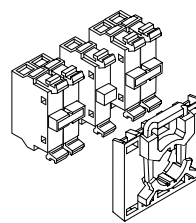
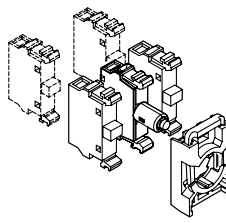
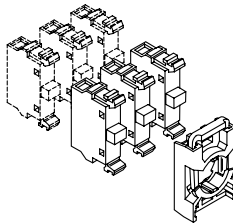
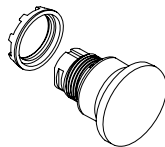
**Pilot Devices**  
Modular Range  
Components, 22mm

7

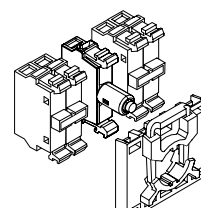
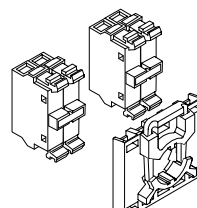
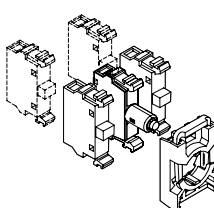
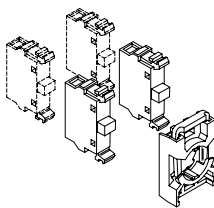
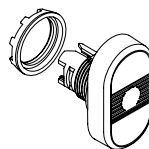
Pushbuttons



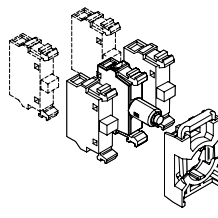
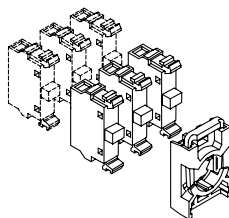
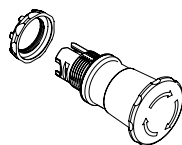
Mushroom pushbuttons



Double pushbuttons

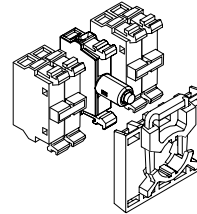
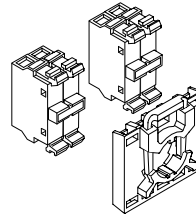
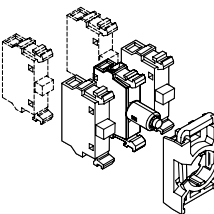
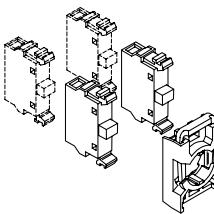
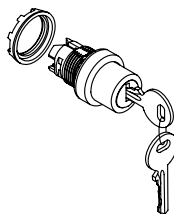
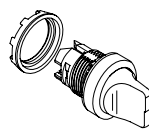


Emergency stop pushbuttons

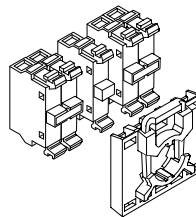
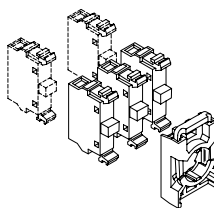
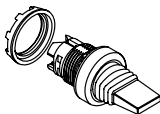


Selector switches

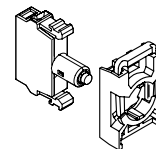
Key-operated selector switches



Toggle switches



Pilot lights



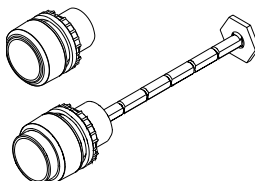
Buzzers



Potentiometers



Reset pushbuttons



## Catalog number explanation

### Modular pilot devices

#### Pilot light

Example 1: Type [ML1-100R](#)

**L1** Pilot Light Head

Lens color:

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

#### Operators

7 Example 2: Type [MP1-10Y](#)

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

Button color:

**R** = Red  
**G** = Green  
**Y** = Yellow  
**L** = Blue  
**W** = White  
**B** = Black (non-illuminated only)  
**C** = Clear  
**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 [M2SSK1-101](#)

**2SSK** 2-pos. Selector **S**witch, **K**ey-lockable  
**3SSK** 3-pos. Selector **S**witch, **K**ey-lockable  
**PK** Pushbutton, **K**ey-lockable

Key code:

**1** = 71  
**2** = 72  
**3** = 73

#### Buzzer, contact blocks, lamp blocks

Example 4: Type [MCBH-10](#)

**B** Buzzer  
**CB** Contact **B**lock  
**CBH** Contact **B**lock with **H**older  
**LB** Lamp **B**lock

Contact blocks:

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

**M** = "Generation" M, Modular Range

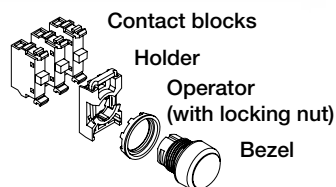
## Flush and extended pushbuttons

### Non-illuminated, momentary and maintained

#### How to order:

**Alt.1** • Operator  
+ Holder  
+ Contact block(s)

**Alt.2** • Operator  
+ Holder with Contact block(s)



NOTE: For contact blocks & holders, see Accessories page 7.26

#### Bezel - How to order

Black plastic - Standard  
Chrome plastic - Replace '1' with '2' in Catalog number  
Chrome metal - Replace '1' with '3' in Catalog number



| Bezel options | Catalog number |
|---------------|----------------|
| Black plastic | MPX-10X        |
| Chrome metal  | MPX-30X        |



Non-illuminated flush pushbutton with black plastic bezel

#### Operator: pushbutton

| Description             | Catalog number | Weight oz. |
|-------------------------|----------------|------------|
| <b>Flush pushbutton</b> |                |            |
| <b>Momentary</b>        |                |            |
| Red                     | MP1-10R        | 0.56       |
| Green                   | MP1-10G        | 0.56       |
| Yellow                  | MP1-10Y        | 0.56       |
| Blue                    | MP1-10L        | 0.56       |
| White                   | MP1-10W        | 0.56       |
| Black                   | MP1-10B        | 0.56       |
| Clear                   | MP1-10C        | 0.56       |
| <b>Maintained</b>       |                |            |
| Red                     | MP2-10R        | 0.56       |
| Green                   | MP2-10G        | 0.56       |
| Yellow                  | MP2-10Y        | 0.56       |
| Blue                    | MP2-10L        | 0.56       |
| White                   | MP2-10W        | 0.56       |
| Black                   | MP2-10B        | 0.56       |
| Clear                   | MP2-10C        | 0.56       |



Non-illuminated extended pushbutton with black plastic bezel

#### Extended pushbutton

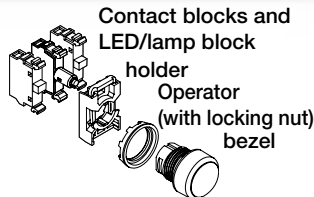
|                   |         |      |
|-------------------|---------|------|
| <b>Momentary</b>  |         |      |
| Red               | MP3-10R | 0.56 |
| Green             | MP3-10G | 0.56 |
| Yellow            | MP3-10Y | 0.56 |
| Blue              | MP3-10L | 0.56 |
| White             | MP3-10W | 0.56 |
| Black             | MP3-10B | 0.56 |
| Clear             | MP3-10C | 0.56 |
| <b>Maintained</b> |         |      |
| Red               | MP4-10R | 0.56 |
| Green             | MP4-10G | 0.56 |
| Yellow            | MP4-10Y | 0.56 |
| Blue              | MP4-10L | 0.56 |
| White             | MP4-10W | 0.56 |
| Black             | MP4-10B | 0.56 |
| Clear             | MP4-10C | 0.56 |

## Flush and extended pushbuttons Illuminated, momentary and maintained

### How to order:

- Alt.1** • Operator  
+ holder  
+ Contact block(s)  
+ LED/lamp block

- Alt.2** • Operator  
+ holder with contact block(s)  
and lamp block



NOTE: No contact block in center position, reserved for lamp block

NOTE: For contact blocks, holders & LED lamp blocks, see Accessories pages 7.25 - 7.30.

### Bezel - How to order

Black plastic - Standard

Chrome plastic - Replace '1' with '2' in Catalog number

Chrome metal - Replace '1' with '3' in Catalog number



| Bezel options | Catalog number |
|---------------|----------------|
| Black plastic | MPX-11X        |
| Chrome metal  | MPX-31X        |

7



Illuminated flush pushbutton  
with black plastic bezel

### Operator: pushbutton

| Description                                                | Catalog number | Weight oz. |
|------------------------------------------------------------|----------------|------------|
| <b>Flush pushbutton (light bulb max 2 W, not included)</b> |                |            |
| <b>Momentary</b>                                           |                |            |
| Red                                                        | MP1-11R        | 0.56       |
| Green                                                      | MP1-11G        | 0.56       |
| Yellow                                                     | MP1-11Y        | 0.56       |
| Blue                                                       | MP1-11L        | 0.56       |
| White                                                      | MP1-11W        | 0.56       |
| Clear                                                      | MP1-11C        | 0.56       |
| <b>Maintained</b>                                          |                |            |
| Red                                                        | MP2-11R        | 0.56       |
| Green                                                      | MP2-11G        | 0.56       |
| Yellow                                                     | MP2-11Y        | 0.56       |
| Blue                                                       | MP2-11L        | 0.56       |
| White                                                      | MP2-11W        | 0.56       |
| Clear                                                      | MP2-11C        | 0.56       |

### Extended pushbutton (light bulb max 2 W, not included)

|                   |         |      |
|-------------------|---------|------|
| <b>Momentary</b>  |         |      |
| Red               | MP3-11R | 0.56 |
| Green             | MP3-11G | 0.56 |
| Yellow            | MP3-11Y | 0.56 |
| Blue              | MP3-11L | 0.56 |
| White             | MP3-11W | 0.56 |
| Clear             | MP3-11C | 0.56 |
| <b>Maintained</b> |         |      |
| Red               | MP4-11R | 0.56 |
| Green             | MP4-11G | 0.56 |
| Yellow            | MP4-11Y | 0.56 |
| Blue              | MP4-11L | 0.56 |
| White             | MP4-11W | 0.56 |
| Clear             | MP4-11C | 0.56 |



Illuminated extended push- button with  
black plastic bezel

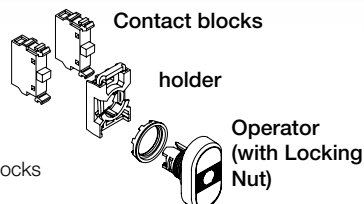
## Double pushbuttons

### Non-illuminated

#### How to order:

**Alt.1** • Operator  
+ holder  
+ Contact blocks

**Alt.2** • Operator  
+ holder with contact blocks



NOTE: No contact block in center position  
For contact blocks & holders, see Accessories pages 7.26.



Double pushbutton, non-illuminated  
Lens color=black



Double pushbutton, non-illuminated  
Lens color=black



Legend plate holder

#### Operator: Double pushbutton

| Upper button             | Lower button | Catalog number | Weight oz. |
|--------------------------|--------------|----------------|------------|
| <b>Flush pushbuttons</b> |              |                |            |
| <b>Green</b>             | <b>Red</b>   |                |            |
| No text                  | No text      | MPD1-11B       | 0.88       |
| I                        | O            | MPD2-11B       | 0.88       |
| ON                       | OFF          | MPD3-11B       | 0.88       |
| START                    | STOP         | MPD4-11B       | 0.88       |
| <b>White</b>             | <b>Black</b> |                |            |
| No text                  | No text      | MPD5-11B       | 0.88       |
| I                        | O            | MPD6-11B       | 0.88       |
| ON                       | OFF          | MPD7-11B       | 0.88       |
| START                    | STOP         | MPD8-11B       | 0.88       |

#### Extended lower pushbutton

|              |              |           |      |
|--------------|--------------|-----------|------|
| <b>Green</b> | <b>Red</b>   |           |      |
| No text      | No text      | MPD12-11B | 0.88 |
| I            | O            | MPD13-11B | 0.88 |
| ON           | OFF          | MPD14-11B | 0.88 |
| START        | STOP         | MPD15-11B | 0.88 |
| <b>White</b> | <b>Black</b> |           |      |
| No text      | No text      | MPD16-11B | 0.88 |
| I            | O            | MPD17-11B | 0.88 |
| ON           | OFF          | MPD18-11B | 0.88 |
| START        | STOP         | MPD19-11B | 0.88 |

#### Legend plate holder

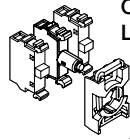
|                     |          |      |
|---------------------|----------|------|
| Legend plate holder | MA1-8139 | 0.11 |
|---------------------|----------|------|

## Double pushbuttons Non-illuminated

### How to order:

**Alt.1** • Operator  
+ Holder  
+ Contact blocks  
+ LED/lamp block

**Alt.2** • Operator  
+ Holder with Contact blocks  
and lamp block



Contact blocks and  
LED/lamp block

Holder

Operator  
(with Locking Nut)

NOTE: No contact block in center position, reserved for LED/lamp block  
For contact blocks & holders, see Accessories pages 7.26.

### Operator: Double pushbutton

| Upper button | Lower button | Catalog number | Weight oz. |
|--------------|--------------|----------------|------------|
|--------------|--------------|----------------|------------|

#### Flush pushbutton

##### Red indicator light

| Green   | Red     |          |      |
|---------|---------|----------|------|
| No text | No text | MPD1-11R | 0.88 |
| I       | O       | MPD2-11R | 0.88 |
| ON      | OFF     | MPD3-11R | 0.88 |
| START   | STOP    | MPD4-11R | 0.88 |
| White   | Black   |          |      |
| No text | No text | MPD5-11R | 0.88 |
| I       | O       | MPD6-11R | 0.88 |
| ON      | OFF     | MPD7-11R | 0.88 |
| START   | STOP    | MPD8-11R | 0.88 |

##### Green indicator light

| Red     |         |          |      |
|---------|---------|----------|------|
| No text | No text | MPD1-11G | 0.88 |
| I       | O       | MPD2-11G | 0.88 |
| ON      | OFF     | MPD3-11G | 0.88 |
| START   | STOP    | MPD4-11G | 0.88 |
| White   | Black   |          |      |
| No text | No text | MPD5-11G | 0.88 |
| I       | O       | MPD6-11G | 0.88 |
| ON      | OFF     | MPD7-11G | 0.88 |
| START   | STOP    | MPD8-11G | 0.88 |

##### Yellow indicator light

| Green   | Red     |          |      |
|---------|---------|----------|------|
| No text | No text | MPD1-11Y | 0.88 |
| I       | O       | MPD2-11Y | 0.88 |
| ON      | OFF     | MPD3-11Y | 0.88 |
| START   | STOP    | MPD4-11Y | 0.88 |
| White   | Black   |          |      |
| No text | No text | MPD5-11Y | 0.88 |
| I       | O       | MPD6-11Y | 0.88 |
| ON      | OFF     | MPD7-11Y | 0.88 |
| START   | STOP    | MPD8-11Y | 0.88 |

##### Clear indicator light

| Green   | Red     |          |      |
|---------|---------|----------|------|
| No text | No text | MPD1-11C | 0.88 |
| I       | O       | MPD2-11C | 0.88 |
| ON      | OFF     | MPD3-11C | 0.88 |
| START   | STOP    | MPD4-11C | 0.88 |
| White   | Black   |          |      |
| No text | No text | MPD5-11C | 0.88 |
| I       | O       | MPD6-11C | 0.88 |
| ON      | OFF     | MPD7-11C | 0.88 |
| START   | STOP    | MPD8-11C | 0.88 |

NOTE: LED bulb or integrated LED block recommended.



Double pushbutton, illuminated  
Lens color: Red, green, yellow, clear



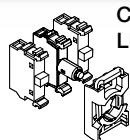
Double pushbutton, illuminated  
Lens color: Red, green, yellow, clear

## Double pushbuttons Illuminated

### How to order:

**Alt.1** • Operator  
+ Holder  
+ Contact blocks  
+ LED/lamp block

**Alt.2** • Operator  
+ Holder with Contact blocks  
and lamp block



Contact blocks and  
LED/lamp block

Holder



Operator  
(with Locking  
Nut)

NOTE: No contact block in center position, reserved for LED/lamp block.  
For contact blocks, holders & LED lamp blocks, see Accessories pages 7.25 - 7.30.



Double pushbutton with extended  
lower button, illuminated  
Lens color: Red, green, yellow, clear

### Operator: Double pushbutton

| Upper<br>button | Lower<br>button | Catalog number | Weight<br>oz. |
|-----------------|-----------------|----------------|---------------|
|-----------------|-----------------|----------------|---------------|

#### Extended Lower button

#### Red indicator light

| Green   | Red     |           |      |
|---------|---------|-----------|------|
| No text | No text | MPD12-11R | 0.88 |
| I       | O       | MPD13-11R | 0.88 |
| ON      | OFF     | MPD14-11R | 0.88 |
| START   | STOP    | MPD15-11R | 0.88 |
| White   | Black   |           |      |
| No text | No text | MPD16-11R | 0.88 |
| I       | O       | MPD17-11R | 0.88 |
| ON      | OFF     | MPD18-11R | 0.88 |
| START   | STOP    | MPD19-11R | 0.88 |

#### Green indicator light

| Green   | Red     |           |      |
|---------|---------|-----------|------|
| No text | No text | MPD12-11G | 0.88 |
| I       | O       | MPD13-11G | 0.88 |
| ON      | OFF     | MPD14-11G | 0.88 |
| START   | STOP    | MPD15-11G | 0.88 |
| White   | Black   |           |      |
| No text | No text | MPD16-11G | 0.88 |
| I       | O       | MPD17-11G | 0.88 |
| ON      | OFF     | MPD18-11G | 0.88 |
| START   | STOP    | MPD19-11G | 0.88 |

#### Yellow indicator light

| Green   | Red     |           |      |
|---------|---------|-----------|------|
| No text | No text | MPD12-11Y | 0.88 |
| I       | O       | MPD13-11Y | 0.88 |
| ON      | OFF     | MPD14-11Y | 0.88 |
| START   | STOP    | MPD15-11Y | 0.88 |
| White   | Black   |           |      |
| No text | No text | MPD16-11Y | 0.88 |
| I       | O       | MPD17-11Y | 0.88 |
| ON      | OFF     | MPD18-11Y | 0.88 |
| START   | STOP    | MPD19-11Y | 0.88 |

#### Clear indicator light

| Green   | Red     |           |      |
|---------|---------|-----------|------|
| No text | No text | MPD12-11C | 0.88 |
| I       | O       | MPD13-11C | 0.88 |
| ON      | OFF     | MPD14-11C | 0.88 |
| START   | STOP    | MPD15-11C | 0.88 |
| White   | Black   |           |      |
| No text | No text | MPD16-11C | 0.88 |
| I       | O       | MPD17-11C | 0.88 |
| ON      | OFF     | MPD18-11C | 0.88 |
| START   | STOP    | MPD19-11C | 0.88 |

NOTE: LED bulb or integrated LED block recommended

## Mushroom pushbuttons

### Non-illuminated and illuminated

#### How to order non-illuminated:

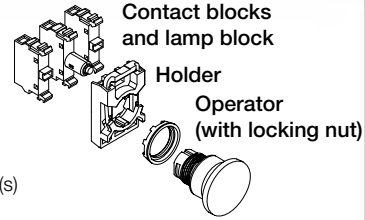
**Alt.1** • Operator  
+ Holder  
+ Contact block(s)

**Alt.2** • Operator  
+ Holder with Contact block(s)

#### How to order illuminated:

**Alt.1** • Operator  
+ Holder  
+ Contact block(s)  
+ LED/lamp block

**Alt.2** • Operator  
+ Holder with Contact block(s)  
and lamp block



NOTE: No contact block in center position, reserved for LED/lamp block  
For contact blocks, holders & LED lamp blocks, see Accessories pages 7.25 - 7.30.

#### Operator: Mushroom pushbutton

| Description            | Catalog number | Weight oz. |
|------------------------|----------------|------------|
| <b>Non-illuminated</b> |                |            |
| <b>Ø 40 mm</b>         |                |            |
| Red                    | MPM1-10R       | 0.63       |
| Green                  | MPM1-10G       | 0.63       |
| Yellow                 | MPM1-10Y       | 0.63       |
| black                  | MPM1-10B       | 0.63       |
| <b>Ø 60 mm</b>         |                |            |
| Red                    | MPM2-10R       | 0.71       |
| Yellow                 | MPM2-10Y       | 0.71       |
| black                  | MPM2-10B       | 0.71       |

#### Illuminated (light bulb max 2 W, not included)

|                |          |      |
|----------------|----------|------|
| <b>Ø 40 mm</b> |          |      |
| Red            | MPM1-11R | 0.63 |
| Green          | MPM1-11G | 0.63 |
| Yellow         | MPM1-11Y | 0.63 |
| <b>Ø 60 mm</b> |          |      |
| Red            | MPM2-11R | 0.71 |
| Yellow         | MPM2-11Y | 0.71 |

7



Mushroom pushbuttons,  
non-illuminated



Mushroom pushbuttons,  
illuminated



## Emergency stops

### Non-illuminated and illuminated

### 30mm, 40mm & 60mm head

#### How to order non-illuminated:

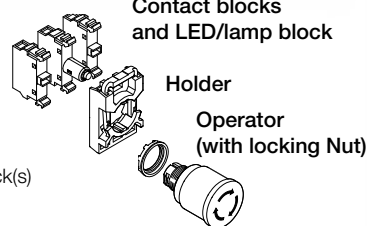
**Alt.1** • Operator  
+ Holder  
+ Contact block(s)

**Alt.2** • Operator  
+ Holder with Contact block(s)

#### How to order illuminated:

**Alt.1** • Operator  
+ Holder  
+ Contact block(s)  
+ LED/lamp block

**Alt.2** • Operator  
+ Holder with Contact block(s)  
and LED/lamp block



NOTE: For contact blocks, holders & LED lamp blocks, see Accessories pages 7.25 - 7.30.

Fulfills IEC 60947-5-5

#### Operator: Emergency stop ①



Emergency stop, key release,  
non-illuminated, Ø 40 mm

| Description            |                                  | Catalog number | Weight<br>oz. |
|------------------------|----------------------------------|----------------|---------------|
| <b>Non-illuminated</b> |                                  |                |               |
| Ø 30 mm                |                                  |                |               |
| Red                    | Twist release                    | MPET3-10R      | 1.3           |
| Red                    | Key release code 71/Ronis 455    | MPEK3-11R      | 2.3           |
| Red                    | Key release code 72/Ronis 421    | MPEK3-12R      | 2.3           |
| Red                    | Key release code 73/Ronis 3433-E | MPEK3-13R      | 2.3           |
| Ø 40 mm                |                                  |                |               |
| Red                    | Twist release                    | MPET4-10R      | 1.3           |
| Red                    | Key release code 71/Ronis 455    | MPEK4-11R      | 2.3           |
| Red                    | Key release code 72/Ronis 421    | MPEK4-12R      | 2.3           |
| Red                    | Key release code 73/Ronis 3433-E | MPEK4-13R      | 2.3           |
| Ø 60 mm                |                                  |                |               |
| Red                    | Twist release                    | MPMT4-11R      | 1.7           |

#### Illuminated (bulb max 2 W, not included).



Emergency stop, twist release  
illuminated, Ø 40 mm

|         |               |           |     |
|---------|---------------|-----------|-----|
| Ø 40 mm |               |           |     |
| Red     | Twist release | MPMT3-11R | 1.4 |
| Ø 60 mm |               |           |     |
| Red     | Twist release | MPMT4-11R | 1.7 |

To comply with the standard, IEC 60947-5-5, a number of tests have to be conducted:

|                        |                                                                                                               |                                                 |                                               |
|------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------|
| <b>Durability test</b> | 6,050 cycles. This is not a test of mechanical life. The product has a mechanical life of 100,000 operations. | <b>Latching test</b>                            | Impulse voltage test at 2,500 V               |
| <b>Robustness</b>      | The force 113 N applied in three axes                                                                         | <b>Resetting test</b>                           | Pulling force < 50 N<br>Turning torque < 1 Nm |
| <b>Conditioning</b>    | Heat and cold, moist atmosphere, and in 5 % NaCl                                                              | <b>Shock</b>                                    | 15 g shock                                    |
|                        |                                                                                                               | <b>Vibration</b>                                | 2 h at 50m/s <sup>2</sup>                     |
|                        |                                                                                                               | <b>Contacts with positive opening operation</b> | 15 g shock                                    |

① E-stop requires yellow background. See legend plates on page 7.118.

## Twist, pull or key release operators

### Non-illuminated and illuminated

### 30mm & 40mm head

#### How to order non-illuminated:

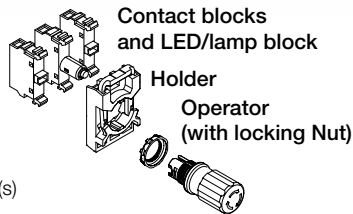
**Alt.1** • Operator  
+ Holder  
+ Contact block(s)

**Alt.2** • Operator  
+ Holder with Contact block(s)

#### How to order illuminated:

**Alt.1** • Operator  
+ Holder  
+ Contact block(s)  
+ LED/lamp block

**Alt.2** • Operator  
+ Holder with Contact block(s)  
and LED/lamp block



NOTE: For contact blocks, holders & LED lamp blocks, see Accessories pages 7.25 - 7.30.

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Pull release, Ø 30 mm



Key release, Ø 30 mm

#### Operator: Push pull or twist release

| Description            |                               | Catalog number | Weight oz. |
|------------------------|-------------------------------|----------------|------------|
| <b>Non-illuminated</b> |                               |                |            |
| Ø 30 mm                |                               |                |            |
| Black                  | Twist release                 | MPET3-10B      | 1.3        |
| Black                  | Pull release                  | MPEP3-10B      | 1.3        |
| Red                    | Pull release                  | MPEP3-10R      | 1.3        |
| Black                  | Key release code 71/Ronis 455 | MPEK3-11B      | 1.3        |
| Ø 40 mm                |                               |                |            |
| Black                  | Twist release                 | MPET4-10B      | 1.3        |
| Black                  | Pull release                  | MPEP4-10B      | 1.3        |
| Red                    | Pull release                  | MPEP4-10R      | 1.3        |
| Black                  | Key release code 71/Ronis 455 | MPEK4-11B      | 1.3        |
| Ø 60 mm                |                               |                |            |
| Red                    | Pull release                  | MPMP4-11R      | 1.7        |
| <b>Illuminated</b>     |                               |                |            |
| Ø 40 mm                |                               |                |            |
| Red                    | Pull release                  | MPMP3-11R      | 1.4        |
| Ø 60 mm                |                               |                |            |
| Red                    | Pull release                  | MPMP4-11R      | 1.7        |

To comply with the standard, IEC 60947-5-5, a number of tests have to be conducted:

|                        |                                                                                                               |                                                 |                                               |
|------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------|
| <b>Durability test</b> | 6,050 cycles. This is not a test of mechanical life. The product has a mechanical life of 100,000 operations. | <b>Latching test</b>                            | Impulse voltage test at 2,500 V               |
| <b>Robustness</b>      | The force 113 N applied in three axes                                                                         | <b>Resetting test</b>                           | Pulling force < 50 N<br>Turning torque < 1 Nm |
| <b>Conditioning</b>    | Heat and cold, moist atmosphere, and in 5 % NaC                                                               | <b>Shock</b>                                    | 15 g shock                                    |
|                        |                                                                                                               | <b>Vibration</b>                                | 2 h at 50m/s <sup>2</sup>                     |
|                        |                                                                                                               | <b>Contacts with positive opening operation</b> | 15 g shock                                    |



Twist release, Ø 40 mm

① Use as a twist, pull or key release. Operator is not an E-Stop.

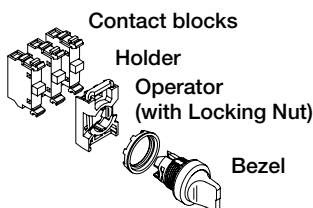
## Selector switches

### Two position, non-illuminated

#### How to order:

**Alt.1** • Operator  
+ Holder  
+ Contact block(s)

**Alt.2** • Operator  
+ Holder with Contact block(s)



NOTE: No contact block in center position  
For contact blocks & holders, see Accessories pages 7.26.

#### Bezel - How to order

Black plastic - Standard  
Chrome metal - Replace '1' with '3' in  
Catalog number



| Bezel options | Catalog number |
|---------------|----------------|
| Black plastic | M2SS(X)-10X    |
| Chrome metal  | M2SS(X)-30X    |



Selector switch, short handle

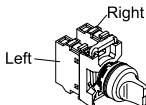


Selector switch, long handle

#### Operator: Two-position Selector Switch

| Description                                                                             | Catalog number | Weight oz. |
|-----------------------------------------------------------------------------------------|----------------|------------|
| <b>Short handle</b>                                                                     |                |            |
| <b>Maintained</b>                                                                       |                |            |
|  Red   | M2SS1-10R      | 0.53       |
| Black                                                                                   | M2SS1-10B      | 0.53       |
| Grey                                                                                    | M2SS1-10U      | 0.53       |
| <b>Momentary, spring return from C to B</b>                                             |                |            |
|  Red  | M2SS3-10R      | 0.53       |
| Black                                                                                   | M2SS3-10B      | 0.53       |
| Grey                                                                                    | M2SS3-10U      | 0.53       |
| <b>Long handle</b>                                                                      |                |            |
| <b>Maintained</b>                                                                       |                |            |
|  Red | M2SS4-10R      | 0.63       |
| Black                                                                                   | M2SS4-10B      | 0.63       |
| Grey                                                                                    | M2SS4-10U      | 0.63       |
| <b>Momentary, spring return from C to B</b>                                             |                |            |
|  Red | M2SS6-10R      | 0.63       |
| Black                                                                                   | M2SS6-10B      | 0.63       |
| Grey                                                                                    | M2SS6-10U      | 0.63       |

#### Contacts actuated

|                                                                                       |  |                                     |                                     |
|---------------------------------------------------------------------------------------|--|-------------------------------------|-------------------------------------|
|    |  |                                     |                                     |
| <b>Handle position</b>                                                                |  | <b>Left block</b>                   | <b>Right block</b>                  |
|  B |  | <input type="checkbox"/>            | <input type="checkbox"/>            |
| A                                                                                     |  | <input type="checkbox"/>            | <input type="checkbox"/>            |
|  C |  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

☐ Not actuated  
☒ Actuated

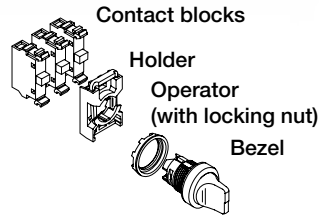
## Selector switches

### Three position, non-illuminated

#### How to order:

**Alt.1** • Operator  
+ Holder  
+ Contact block(s)

**Alt.2** • Operator  
+ Holder with Contact block(s)



NOTE: For contact blocks & holders, see Accessories pages 7.26.

#### Bezel - How to order

Black plastic - Standard

Chrome metal - Replace '1' with '3' in Catalog number



| Bezel options | Catalog number |
|---------------|----------------|
| Black plastic | M3SS(X)-10X    |
| Chrome metal  | M3SS(X)-30X    |

7



Selector Switch, short handle

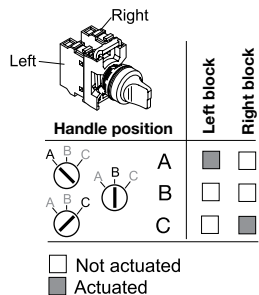


Selector Switch, long handle

#### Operator: Three-position selector switch

| Description                                                                               | Catalog number | Weight oz. |
|-------------------------------------------------------------------------------------------|----------------|------------|
| <b>Short handle</b>                                                                       |                |            |
| <b>Maintained</b>                                                                         |                |            |
|  Red     | M3SS1-10R      | 0.53       |
|  Black   | M3SS1-10B      | 0.53       |
|  Grey    | M3SS1-10U      | 0.53       |
| <b>Momentary, spring return from A to B and from C to B</b>                               |                |            |
|  Red     | M3SS2-10R      | 0.53       |
|  Black  | M3SS2-10B      | 0.53       |
|  Grey  | M3SS2-10U      | 0.53       |
| <b>Momentary, spring return from C to B</b>                                               |                |            |
|  Red    | M3SS3-10R      | 0.53       |
|  Black | M3SS3-10B      | 0.53       |
|  Grey  | M3SS3-10U      | 0.53       |
| <b>Momentary, spring return from A to B</b>                                               |                |            |
|  Red   | M3SS7-10R      | 0.53       |
|  Black | M3SS7-10B      | 0.53       |
|  Grey  | M3SS7-10U      | 0.53       |
| <b>Long handle</b>                                                                        |                |            |
| <b>Maintained</b>                                                                         |                |            |
|  Red   | M3SS4-10R      | 0.63       |
|  Black | M3SS4-10B      | 0.63       |
|  Grey  | M3SS4-10U      | 0.63       |
| <b>Momentary, spring return from A to B and from C to B</b>                               |                |            |
|  Red   | M3SS5-10R      | 0.63       |
|  Black | M3SS5-10B      | 0.63       |
|  Grey  | M3SS5-10U      | 0.63       |
| <b>Momentary, spring return from C to B</b>                                               |                |            |
|  Red   | M3SS6-10R      | 0.63       |
|  Black | M3SS6-10B      | 0.63       |
|  Grey  | M3SS6-10U      | 0.63       |
| <b>Momentary, spring return from A to B</b>                                               |                |            |
|  Red   | M3SS8-10R      | 0.63       |
|  Black | M3SS8-10B      | 0.63       |
|  Grey  | M3SS8-10U      | 0.63       |

#### Contacts actuated



## Selector switches

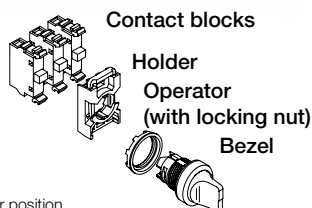
### Three position with operation of center position

#### How to order:

**Alt.1** • Operator  
+ Holder  
+ Contact block(s)

**Alt.2** • Operator  
+ Holder with contact block(s)

NOTE: No contact block in center position  
For contact blocks & holders, see Accessories pages 7.26.



#### Bezel - How to order

Black plastic - Standard  
Chrome metal - Replace '1' with '3' in Catalog number



| Bezel options | Catalog number |
|---------------|----------------|
| Black plastic | M3SSC(X)-10B   |
| Chrome metal  | M3SSC(X)-30B   |



Selector switch, short handle

#### Operator: Three-position selector switch with operation of center position

| Description                                                                             | Catalog number | Weight oz. |
|-----------------------------------------------------------------------------------------|----------------|------------|
| <b>Short handle</b>                                                                     |                |            |
|  Black | M3SSC1-10B     | 0.53       |
|  Black | M3SSC2-10B     | 0.53       |
|  Black | M3SSC3-10B     | 0.53       |
|  Black | M3SSC7-10B     | 0.53       |



Selector switch, long handle

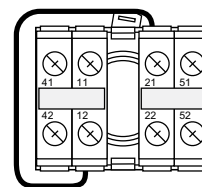
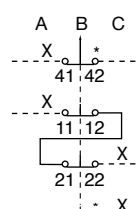
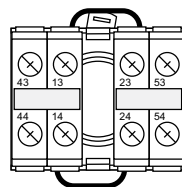
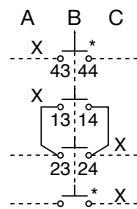
|                                                                                           |            |      |
|-------------------------------------------------------------------------------------------|------------|------|
| <b>Long handle</b>                                                                        |            |      |
|  Black | M3SSC4-10B | 0.63 |
|  Black | M3SSC5-10B | 0.63 |
|  Black | M3SSC6-10B | 0.63 |
|  Black | M3SSC8-10B | 0.63 |

#### Center position connection detail

#### Contacts actuated

| Handle position                                                                       | Left block                          | Center block                        | Right block                         |
|---------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
|  A | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/>            |
|  B | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
|  C | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

☐ Not actuated  
☒ Actuated



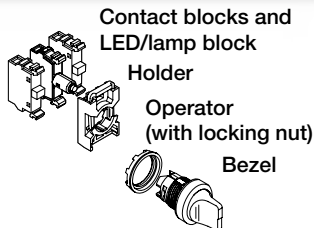
## Selector switches

### Two position, illuminated

#### How to order:

- Alt.1** • Operator  
+ Holder  
+ Contact block(s)  
+ LED/lamp block

- Alt.2** • Operator  
+ Holder with Contact block(s)  
and LED/lamp block



NOTE: For contact blocks, holders & LED lamp blocks, see Accessories pages 7.25 - 7.30.

#### Bezel - How to order

black plastic - Standard  
Chrome metal - Replace '1' with '3' in  
Catalog number



| bezel options | Catalog number |
|---------------|----------------|
| black plastic | M2SS(X)-11X    |
| Chrome metal  | M2SS(X)-31X    |

7



Selector switch, short handle

#### Operator: Two-position selector switch (light bulb max 2W, not included)

| Description                                                                             | Catalog number | Weight oz. |
|-----------------------------------------------------------------------------------------|----------------|------------|
| <b>Short handle</b>                                                                     |                |            |
| <b>Maintained</b>                                                                       |                |            |
|  Red   | M2SS1-11R      | 0.53       |
| Green                                                                                   | M2SS1-11G      | 0.53       |
| Yellow                                                                                  | M2SS1-11Y      | 0.53       |
| Blue                                                                                    | M2SS1-11L      | 0.53       |
| Clear                                                                                   | M2SS1-11C      | 0.53       |
| <b>Momentary</b>                                                                        |                |            |
| <b>Maintained</b>                                                                       |                |            |
|  Red | M2SS2-11R      | 0.53       |
| Green                                                                                   | M2SS2-11G      | 0.53       |
| Yellow                                                                                  | M2SS2-11Y      | 0.53       |
| Blue                                                                                    | M2SS2-11L      | 0.53       |
| Clear                                                                                   | M2SS2-11C      | 0.53       |
| <b>Momentary, spring return from C to B</b>                                             |                |            |
|  Red | M2SS3-11R      | 0.53       |
| Green                                                                                   | M2SS3-11G      | 0.53       |
| Yellow                                                                                  | M2SS3-11Y      | 0.53       |
| Blue                                                                                    | M2SS3-11L      | 0.53       |
| Clear                                                                                   | M2SS3-11C      | 0.53       |
| <b>Long handle</b>                                                                      |                |            |
| <b>Maintained</b>                                                                       |                |            |
|  Red | M2SS4-11R      | 0.63       |
| Green                                                                                   | M2SS4-11G      | 0.63       |
| Yellow                                                                                  | M2SS4-11Y      | 0.63       |
| Blue                                                                                    | M2SS4-11L      | 0.63       |
| Clear                                                                                   | M2SS4-11C      | 0.63       |
| <b>Momentary</b>                                                                        |                |            |
| <b>Maintained</b>                                                                       |                |            |
|  Red | M2SS5-11R      | 0.63       |
| Green                                                                                   | M2SS5-11G      | 0.63       |
| Yellow                                                                                  | M2SS5-11Y      | 0.63       |
| Blue                                                                                    | M2SS5-11L      | 0.63       |
| Clear                                                                                   | M2SS5-11C      | 0.63       |
| <b>Momentary, spring return from C to B</b>                                             |                |            |
|  Red | M2SS6-11R      | 0.63       |
| Green                                                                                   | M2SS6-11G      | 0.63       |
| Yellow                                                                                  | M2SS6-11Y      | 0.63       |
| Blue                                                                                    | M2SS6-11L      | 0.63       |
| Clear                                                                                   | M2SS6-11C      | 0.63       |



Selector switch, long handle

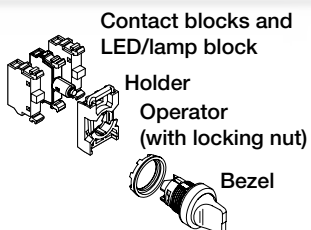
## Selector switches

### Three position, illuminated, short handle

#### How to order:

**Alt.1** • Operator  
+ Holder  
+ Contact block(s)  
+ LED/lamp block

**Alt.2** • Operator  
+ Holder with Contact block(s)  
and LED/lamp block



NOTE: For contact blocks, holders & LED lamp blocks, see Accessories pages 7.25 - 7.30.

#### Bezel - How to order

Black plastic - Standard  
Chrome metal - Replace '1' with '3' in  
Catalog number



| Bezel options | Catalog number |
|---------------|----------------|
| Black plastic | M3SS(X)-11X    |
| Chrome metal  | M3SS(X)-31X    |



Selector switch, short handle

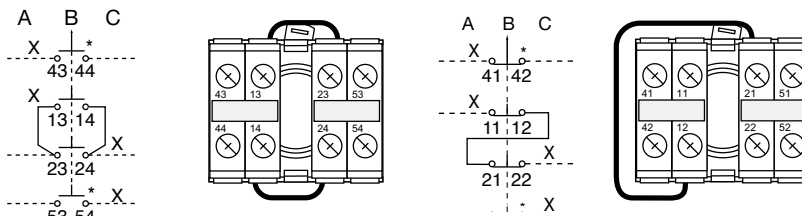
#### Operator: Three-position selector switches (light bulb max 2W, not included)

| Description                                                 | Catalog number | Weight oz. |
|-------------------------------------------------------------|----------------|------------|
| <b>Short handle</b>                                         |                |            |
| <b>Maintained</b>                                           |                |            |
| Red                                                         | M3SS1-11R      | 0.53       |
| Green                                                       | M3SS1-11G      | 0.53       |
| Yellow                                                      | M3SS1-11Y      | 0.53       |
| Blue                                                        | M3SS1-11L      | 0.53       |
| Clear                                                       | M3SS1-11C      | 0.53       |
| <b>Momentary, spring return from A to B and from C to B</b> |                |            |
| Red                                                         | M3SS2-11R      | 0.53       |
| Green                                                       | M3SS2-11G      | 0.53       |
| Yellow                                                      | M3SS2-11Y      | 0.53       |
| Blue                                                        | M3SS2-11L      | 0.53       |
| Clear                                                       | M3SS2-11C      | 0.53       |
| <b>Momentary, spring return from C to B</b>                 |                |            |
| Red                                                         | M3SS3-11R      | 0.53       |
| Green                                                       | M3SS3-11G      | 0.53       |
| Yellow                                                      | M3SS3-11Y      | 0.53       |
| Blue                                                        | M3SS3-11L      | 0.53       |
| Clear                                                       | M3SS3-11C      | 0.53       |
| <b>Momentary, spring return from A to B</b>                 |                |            |
| Red                                                         | M3SS7-11R      | 0.53       |
| Green                                                       | M3SS7-11G      | 0.53       |
| Yellow                                                      | M3SS7-11Y      | 0.53       |
| Blue                                                        | M3SS7-11L      | 0.53       |
| Clear                                                       | M3SS7-11C      | 0.53       |

#### Contacts actuated

|                        |       |                                       |                                   |
|------------------------|-------|---------------------------------------|-----------------------------------|
|                        | Right |                                       |                                   |
|                        | Left  |                                       |                                   |
| <b>Handle position</b> |       | <b>Left block</b>                     | <b>Right block</b>                |
|                        | A     | <input type="checkbox"/>              | <input type="checkbox"/>          |
|                        | B     | <input type="checkbox"/>              | <input type="checkbox"/>          |
|                        | C     | <input type="checkbox"/>              | <input type="checkbox"/>          |
|                        |       | <input type="checkbox"/> Not actuated | <input type="checkbox"/> Actuated |

#### Center position connection detail





## Selector switches

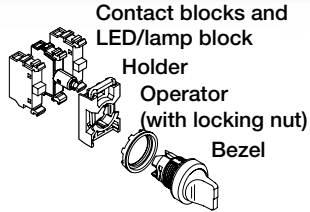
### Three position, illuminated, long handle

#### How to order:

- Alt.1** • Operator  
+ Holder  
+ Contact block(s)  
+ LED/lamp block

- Alt.2** • Operator  
+ Holder with Contact block(s)  
and LED/lamp block

NOTE: For contact blocks, holders & LED lamp blocks, see Accessories pages 7.25 - 7.30.



#### Bezel - How to order

Black plastic - Standard  
Chrome metal - Replace '1' with '3' in  
Catalog number



| Bezel options | Catalog number |
|---------------|----------------|
| Black plastic | M3SS(X)-11X    |
| Chrome metal  | M3SS(X)-31X    |

7



Selector Switch, long handle

#### Operator: Three-position selector switches (light bulb max 2W, not included)

| Description                                                                         | Catalog number | Weight oz. |      |
|-------------------------------------------------------------------------------------|----------------|------------|------|
| Long handle                                                                         |                |            |      |
| Maintained                                                                          |                |            |      |
|    | Red            | M3SS4-11R  | 0.63 |
|                                                                                     | Green          | M3SS4-11G  | 0.63 |
|                                                                                     | Yellow         | M3SS4-11Y  | 0.63 |
|                                                                                     | Blue           | M3SS4-11L  | 0.63 |
|                                                                                     | Clear          | M3SS4-11C  | 0.63 |
| Momentary, spring return from A to B and from C to B                                |                |            |      |
|   | Red            | M3SS5-11R  | 0.63 |
|                                                                                     | Green          | M3SS5-11G  | 0.63 |
|                                                                                     | Yellow         | M3SS5-11Y  | 0.63 |
|                                                                                     | Blue           | M3SS5-11L  | 0.63 |
|                                                                                     | Clear          | M3SS5-11C  | 0.63 |
| Momentary, spring return from C to B                                                |                |            |      |
|  | Red            | M3SS6-11R  | 0.63 |
|                                                                                     | Green          | M3SS6-11G  | 0.63 |
|                                                                                     | Yellow         | M3SS6-11Y  | 0.63 |
|                                                                                     | Blue           | M3SS6-11L  | 0.63 |
|                                                                                     | Clear          | M3SS6-11C  | 0.63 |
| Momentary, spring return from A to B                                                |                |            |      |
|  | Red            | M3SS8-11R  | 0.63 |
|                                                                                     | Green          | M3SS8-11G  | 0.63 |
|                                                                                     | Yellow         | M3SS8-11Y  | 0.63 |
|                                                                                     | Blue           | M3SS8-11L  | 0.63 |
|                                                                                     | Clear          | M3SS8-11C  | 0.63 |

#### Contacts actuated

|                        |       |                                       |                                              |
|------------------------|-------|---------------------------------------|----------------------------------------------|
|                        | Right |                                       |                                              |
|                        | Left  |                                       |                                              |
| <b>Handle position</b> |       | <b>Left block</b>                     | <b>Right block</b>                           |
|                        | A     | <input type="checkbox"/>              | <input type="checkbox"/>                     |
|                        | B     | <input type="checkbox"/>              | <input type="checkbox"/>                     |
|                        | C     | <input type="checkbox"/>              | <input checked="" type="checkbox"/>          |
|                        |       | <input type="checkbox"/> Not actuated | <input checked="" type="checkbox"/> Actuated |



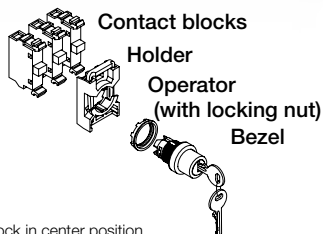
## Key-operated selector switches

### Two and three positions

#### How to order:

**Alt.1** • Operator  
+ Holder  
+ Contact block(s)

**Alt.2** • Operator  
+ Holder with Contact block(s)



NOTE: No contact block in center position.  
For contact blocks & holders, see Accessories pages 7.26.

#### Bezel - How to order

Black plastic - Standard  
Chrome metal - Replace '1' with '3' in  
Catalog number



| Bezel options | Catalog number |
|---------------|----------------|
| Black plastic | M2SSK(X)-10X   |
| Chrome metal  | M3SSK(X)-30X   |



Key-operated selector switch

#### Operator: Key-operated selector switch

|                                                                                         | Description                      | Catalog number | Weight<br>oz. |
|-----------------------------------------------------------------------------------------|----------------------------------|----------------|---------------|
| <b>Two positions</b>                                                                    |                                  |                |               |
| <b>Maintained</b> (The key can be removed in both positions)                            |                                  |                |               |
|                                                                                         | Key release code 71/Ronis 455    | M2SSK1-101     | 1.6           |
|                                                                                         | Key release code 72/Ronis 421    | M2SSK1-102     | 1.6           |
|                                                                                         | Key release code 73/Ronis 3433-E | M2SSK1-103     | 1.6           |
| <b>Maintained</b> (The key can be removed in position B only)                           |                                  |                |               |
|                                                                                         | Key release code 71/Ronis 455    | M2SSK2-101     | 1.6           |
|                                                                                         | Key release code 72/Ronis 421    | M2SSK2-102     | 1.6           |
|                                                                                         | Key release code 73/Ronis 3433-E | M2SSK2-103     | 1.6           |
| <b>Momentary, spring return from C to B</b> (The key can be removed in position B only) |                                  |                |               |
|                                                                                         | Key release code 71/Ronis 455    | M2SSK3-101     | 1.6           |
|                                                                                         | Key release code 72/Ronis 421    | M2SSK3-102     | 1.6           |
|                                                                                         | Key release code 73/Ronis 3433-E | M2SSK3-103     | 1.6           |

#### Contacts actuated

|                        |   |                                       |                                              |
|------------------------|---|---------------------------------------|----------------------------------------------|
|                        |   | Left block                            | Right block                                  |
| <b>Handle position</b> |   |                                       |                                              |
|                        | B | <input type="checkbox"/>              | <input type="checkbox"/>                     |
|                        | C | <input checked="" type="checkbox"/>   | <input checked="" type="checkbox"/>          |
|                        |   | <input type="checkbox"/> Not actuated | <input checked="" type="checkbox"/> Actuated |

#### Contacts actuated

|                        |   |                                       |                                              |
|------------------------|---|---------------------------------------|----------------------------------------------|
|                        |   | Left block                            | Right block                                  |
| <b>Handle position</b> |   |                                       |                                              |
|                        | A | <input checked="" type="checkbox"/>   | <input type="checkbox"/>                     |
|                        | B | <input type="checkbox"/>              | <input type="checkbox"/>                     |
|                        | C | <input type="checkbox"/>              | <input checked="" type="checkbox"/>          |
|                        |   | <input type="checkbox"/> Not actuated | <input checked="" type="checkbox"/> Actuated |

#### Three positions

|                                                                                                         |                                  |            |     |
|---------------------------------------------------------------------------------------------------------|----------------------------------|------------|-----|
| <b>Maintained</b> (The key can be removed in all positions)                                             |                                  |            |     |
|                                                                                                         | Key release code 71/Ronis 455    | M3SSK1-101 | 1.6 |
|                                                                                                         | Key release code 72/Ronis 421    | M3SSK1-102 | 1.6 |
|                                                                                                         | Key release code 73/Ronis 3433-E | M3SSK1-103 | 1.6 |
| <b>Maintained</b> (The key can be removed in position B only)                                           |                                  |            |     |
|                                                                                                         | Key release code 71/Ronis 455    | M3SSK2-101 | 1.6 |
|                                                                                                         | Key release code 72/Ronis 421    | M3SSK2-102 | 1.6 |
|                                                                                                         | Key release code 73/Ronis 3433-E | M3SSK2-103 | 1.6 |
| <b>Momentary, spring return from A to B and from C to B</b> (The key can be removed in position B only) |                                  |            |     |
|                                                                                                         | Key release code 71/Ronis 455    | M3SSK3-101 | 1.6 |
|                                                                                                         | Key release code 72/Ronis 421    | M3SSK3-102 | 1.6 |
|                                                                                                         | Key release code 73/Ronis 3433-E | M3SSK3-103 | 1.6 |



Potentiometer

## Potentiometers

### Operator: Potentiometer

| Description                                                         | Catalog number | Weight oz. |
|---------------------------------------------------------------------|----------------|------------|
| <b>Complete Potentiometers</b>                                      |                |            |
| Black knob with integrated position indication and marking in white |                |            |
| <b>With resistor 5 kohm</b>                                         |                |            |
| Black plastic bezel                                                 | MT-105B        | 1.4        |
| Chrome metal bezel                                                  | MT-305B        | 1.7        |
| <b>With resistor 10 kohm</b>                                        |                |            |
| Black plastic bezel                                                 | MT-110B        | 1.4        |
| Chrome metal bezel                                                  | MT-310B        | 1.7        |
| <b>With resistor 50 kohm</b>                                        |                |            |
| Black plastic bezel                                                 | MT-150B        | 1.4        |
| Chrome metal bezel                                                  | MT-350B        | 1.7        |

### Knob without Resistor

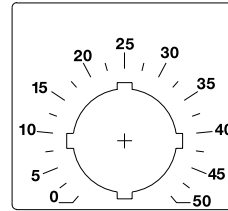
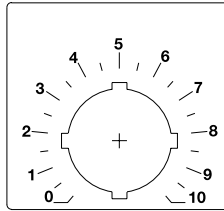
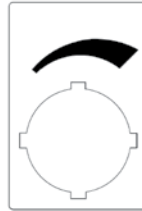
Black knob with integrated position indication and marking in white.  
For shaft diameter 6 -6.35 mm.  
Min. shaft length 20 mm.

|                     |         |     |
|---------------------|---------|-----|
| Black plastic bezel | KT-100B | 1.2 |
| Chrome metal bezel  | KT-300B | 1.5 |

### Legend plates aluminum

|                  |                  |                 |       |
|------------------|------------------|-----------------|-------|
| Symbol: see fig. | (29.6 x 44.5 mm) | SK 615 562-87   | 0.071 |
| Scale: 0-10      | (48.5 x 44.5 mm) | SK 615 562-88   | 0.071 |
| Scale: 0-50      | (48.5 x 44.5 mm) | 1SFA611830R1252 | 0.071 |

Legend plates



## Buzzers



Buzzer

### Operator: Buzzer

| Description                                                                                                                                                      | Catalog number             | Weight oz. |       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------|-------|
| <b>Buzzers</b>                                                                                                                                                   |                            |            |       |
| Black. Frequency: Approx. 2400 Hz.<br>Loudness: Min 80 dB (A)/10 cm<br>Rated Current: < 8 mA.<br>Service Life:>5000 h<br>Suitable for both 50 and 60 Hz networks |                            |            |       |
| <b>Supply voltage</b>                                                                                                                                            | <b>Tone Catalog number</b> |            |       |
| 24 V AC/DC                                                                                                                                                       | Continuous                 | KB1-4010   | 0.020 |
| 115 V AC/DC                                                                                                                                                      | Continuous                 | KB1-4030   | 0.020 |
| 230 V AC                                                                                                                                                         | Continuous                 | KB1-4040   | 0.020 |
| 24 V AC/DC                                                                                                                                                       | Pulsating                  | KB1-4110   | 0.020 |
| 115 V AC/DC                                                                                                                                                      | Pulsating                  | KB1-4130   | 0.020 |
| 230 V AC                                                                                                                                                         | Pulsating                  | KB1-4140   | 0.020 |

## Reset pushbuttons

### How to order without shaft:

Alt.1 • Operator

### How to order with shaft:

Alt.1 • Operator  
+ shaft  
+ flexible joint

### Bezel - How to order

Black plastic - Standard

Chrome metal - Replace '1' with '3' in  
Catalog number

| Bezel options | Catalog number |
|---------------|----------------|
| Black plastic | KPRX-10XX      |
| Chrome metal  | KPRX-30XX      |



### Operator: Reset pushbutton



Reset pushbutton actuator  
without shaft

#### Without shaft

##### Flush pushbutton

| Description | Text    | Catalog number | Weight<br>oz. |
|-------------|---------|----------------|---------------|
| Red         | No text | KPR1-100R      | 0.71          |
| Green       | No text | KPR1-100G      | 0.71          |
|             | II      | KPR1-103G      | 0.71          |
| Yellow      | No text | KPR1-100Y      | 0.71          |
| Blue        | No text | KPR1-100L      | 0.71          |
|             | R       | KPR1-101L      | 0.71          |
|             | No text | KPR1-100W      | 0.71          |
|             | R       | KPR1-101W      | 0.71          |
|             | I       | KPR1-102W      | 0.71          |
|             | II      | KPR1-103W      | 0.71          |
| black       | No text | KPR1-100B      | 0.71          |
|             | RESET   | KPR1-104B      | 0.71          |

##### Extended pushbutton

|       |         |           |      |
|-------|---------|-----------|------|
| Red   | No text | KPR2-100R | 0.74 |
|       | O       | KPR2-105R | 0.74 |
| white | No text | KPR2-100W | 0.74 |
| black | No text | KPR2-100B | 0.74 |
|       | O       | KPR2-105B | 0.74 |

#### With shaft

##### flush pushbutton

|        |         |             |      |
|--------|---------|-------------|------|
| Red    | No text | KPR3-100R   | 0.95 |
| Green  | No text | KPR3-100G   | 0.95 |
|        | II      | KPR3-103G   | 0.95 |
| Yellow | No text | KPR3-100Y   | 0.95 |
| Blue   | No text | KPR3-100L   | 0.95 |
|        | R       | KPR3-101L   | 0.95 |
|        | No text | KPR3-100W   | 0.95 |
|        | R       | KPR3-101W   | 0.95 |
|        | I       | KPR3-102W   | 0.95 |
|        | II      | KPR3-103W   | 0.95 |
| Black  | No text | KPR3-100B   | 0.95 |
|        | RESET   | KPR3-104B   | 0.95 |
|        | RESET   | KPR3-104BMR | 0.95 |

##### Extended pushbutton

|       |         |           |      |
|-------|---------|-----------|------|
| Red   | No text | KPR4-100R | 0.99 |
|       | O       | KPR4-105R | 0.99 |
| White | No text | KPR4-100W | 0.99 |
| Black | No text | KPR4-100B | 0.99 |
|       | O       | KPR4-105B | 0.99 |

**Accessories** – In applications with long shaft, a flexible joint can be used to avoid damage to the shaft.

**Shaft:** (including fixing nut)

|          |      |
|----------|------|
| KA1-8046 | 0.25 |
|----------|------|

**Flexible joint**

|          |      |
|----------|------|
| KA1-8047 | 0.18 |
|----------|------|

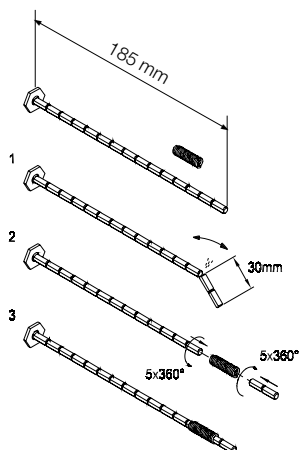
**240mm metal shaft**

Including fixing nut & foot

|            |  |
|------------|--|
| KA1-8046MR |  |
|------------|--|



Reset pushbutton with shaft marked "R"

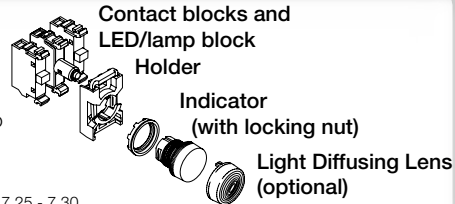


## Pilot lights

### How to order:

**Alt.1** • Indicator  
+ Holder  
+ LED/lamp block

**Alt.2** • Indicator  
+ Holder  
+ LED/lamp block  
+ Lens: used together with LED to  
improve light diffusion (Cannot  
be used together with Text Cap)



For contact blocks, holders & LED lamp blocks, see Accessories pages 7.25 - 7.30.

7



Pilot light



Light diffusing lens

### Indicator: Pilot light

| Description         | Catalog number | Weight oz. |
|---------------------|----------------|------------|
| <b>Pilot lights</b> |                |            |
| Red                 | ML1-100R       | 0.63       |
| Green               | ML1-100G       | 0.63       |
| Yellow              | ML1-100Y       | 0.63       |
| Blue                | ML1-100L       | 0.63       |
| White               | ML1-100W       | 0.63       |
| Clear               | ML1-100C       | 0.63       |

**Note:** Bulbs, lamp blocks & LED blocks are not included – See Accessories page 7.27.

### Accessories

|                             |          |       |
|-----------------------------|----------|-------|
| <b>Light diffusing lens</b> | KA1-8005 | 0.035 |
|-----------------------------|----------|-------|

**Note:** Light diffusing lens is used to improve illumination of LED bulbs. Cannot be used together with text cap.

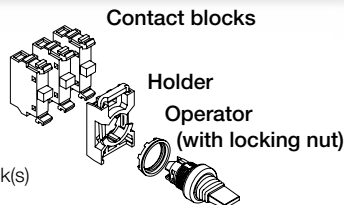
## Toggle switches

### Two and three position

#### How to order:

**Alt.1** • Operator  
+ Holder  
+ Contact block(s)

**Alt.2** • Operator  
+ Holder with Contact block(s)



NOTE: For contact blocks & holders, see Accessories pages 7.26.



Toggle Switch

#### Operator: Toggle switch

| Description          | Bezel         | Catalog number | Weight oz. |
|----------------------|---------------|----------------|------------|
| <b>Two positions</b> |               |                |            |
| <b>Maintained</b>    |               |                |            |
|                      | Black plastic | MTS1-10B       | 0.74       |
|                      | Chrome metal  | MTS1-30B       | 0.74       |

#### Three positions

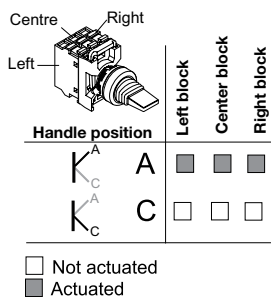
##### Momentary, spring return from A to B and from C to B

|  |               |          |      |
|--|---------------|----------|------|
|  | Black plastic | MTS2-10B | 0.74 |
|  | Chrome metal  | MTS2-30B | 0.74 |

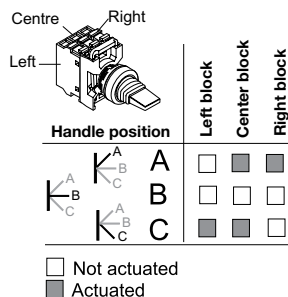
##### Maintained

|  |               |          |      |
|--|---------------|----------|------|
|  | Black plastic | MTS3-10B | 0.74 |
|  | Chrome metal  | MTS3-30B | 0.74 |

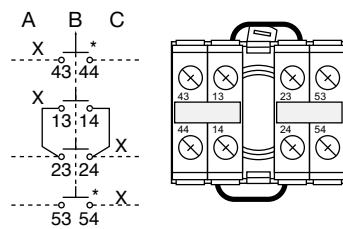
#### Contacts actuated



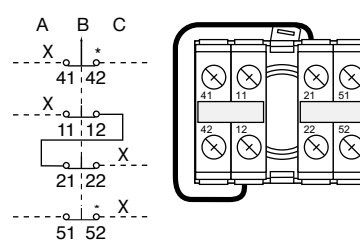
#### Contacts actuated



#### Center position connection detail



\* Contacts may be N.O. or N.C.

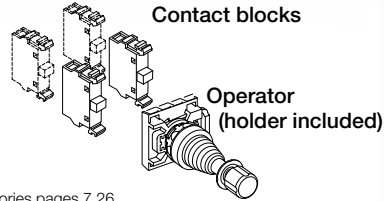


\* Contacts may be N.O. or N.C.

## Joysticks IP67 and IP69K

### How to order:

- Operator holder included  
+ Contact blocks



For contact blocks, see Accessories pages 7.26.

### Operator: Joystick

| Description           | Catalog number | Weight oz. |
|-----------------------|----------------|------------|
| <b>Joystick</b>       |                |            |
| 2-position maintained | MJS1-60B       | 2.2        |
| 2-position momentary  | MJS2-60B       | 2.2        |
| 4-position maintained | MJS5-60B       | 3.1        |
| 4-position momentary  | MJS6-60B       | 3.1        |

### Joystick with latching function

|                       |           |     |
|-----------------------|-----------|-----|
| 2-position maintained | MJS7-60B  | 2.2 |
| 2-position momentary  | MJS8-60B  | 2.2 |
| 4-position maintained | MJS11-60B | 3.1 |
| 4-position momentary  | MJS12-60B | 3.1 |

### Micro switch blocks

|      |         |      |
|------|---------|------|
| 1 NO | MCBL-10 | 0.35 |
| 1 NC | MCBL-01 | 0.35 |

### Legend plates

|                               |          |      |
|-------------------------------|----------|------|
| 2-position (1) (up - down)    | MA6-1240 | 0.14 |
| 2-position (2) (right - left) | MA6-1241 | 0.14 |
| 4-position (3)                | MA6-1242 | 0.14 |

### Legend plate holders

|            |          |      |
|------------|----------|------|
| 4-position | MA1-8137 | 0.14 |
| 2-position | MA1-8138 | 0.11 |

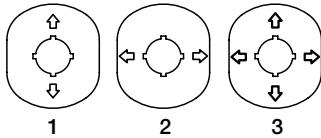
### Insert with symbol

|   |          |       |
|---|----------|-------|
| ↑ | MA6-1065 | 0.035 |
|---|----------|-------|

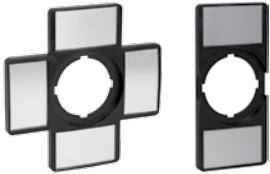
7



Joystick with latching function



Legend plates



Legend plate hc

## Accessories

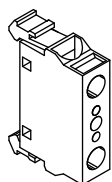
### Transformer and lamp blocks



Transformer block for pilot lights



Transformer block for illuminated operators



Diode block



Lamp block

| Description                                                                                                          | Bulb suffix           |          | Catalog number | Weight oz. |     |
|----------------------------------------------------------------------------------------------------------------------|-----------------------|----------|----------------|------------|-----|
|                                                                                                                      | LED                   | Filament |                |            |     |
| Transformer blocks for pilot lights                                                                                  |                       |          |                |            |     |
| For 6 or 24 V Filament bulb and 24 V LED. Max 1.2 W Filament bulb lamp block included in the transformer, BA 9s base |                       |          |                |            |     |
| Primary voltage                                                                                                      | Secondary voltage     |          |                |            |     |
| 110-127 V AC                                                                                                         | 6 V AC                | –        | T2             | KTR1-1001  | 3.4 |
| 220-250 V AC                                                                                                         | 6 V AC                | –        | T2             | KTR1-1002  | 3.4 |
| 380-420 V AC                                                                                                         | 6 V AC                | –        | T3             | KTR1-1003  | 3.4 |
| 440-480 V AC                                                                                                         | 6 V AC                | –        | T4             | KTR1-1004  | 3.4 |
| 500-600 V AC                                                                                                         | 6 V AC                | –        | T5             | KTR1-1005  | 3.4 |
| 110-127 V AC                                                                                                         | 24 V AC <sup>1)</sup> | T1       | T6             | KTR1-1011  | 3.4 |
| 220-250 V AC                                                                                                         | 24 V AC <sup>1)</sup> | T2       | T7             | KTR1-1012  | 3.4 |
| 380-420 V AC                                                                                                         | 24 V AC <sup>1)</sup> | T3       | T8             | KTR1-1013  | 3.4 |
| 440-480 V AC                                                                                                         | 24 V AC <sup>1)</sup> | T4       | T9             | KTR1-1014  | 3.4 |

#### Transformer blocks for illuminated operators - Intended to supply 1.2W filament bulb mounted in lamp block MLB-J only

|              |                       |    |    |           |     |
|--------------|-----------------------|----|----|-----------|-----|
| 110-127 V AC | 6 V AC                | –  | T2 | KTR1-2001 | 3.4 |
| 220-250 V AC | 6 V AC                | –  | T2 | KTR1-2002 | 3.4 |
| 380-420 V AC | 6 V AC                | –  | T3 | KTR1-2003 | 3.4 |
| 440-480 V AC | 6 V AC                | –  | T4 | KTR1-2004 | 3.4 |
| 500-600 V AC | 6 V AC                | –  | T5 | KTR1-2005 | 3.4 |
| 110-127 V AC | 24 V AC <sup>1)</sup> | T1 | T6 | KTR1-2011 | 3.4 |
| 220-250 V AC | 24 V AC <sup>1)</sup> | T2 | T7 | KTR1-2012 | 3.4 |
| 380-420 V AC | 24 V AC <sup>1)</sup> | T3 | T8 | KTR1-2013 | 3.4 |
| 440-480 V AC | 24 V AC <sup>1)</sup> | T4 | T9 | KTR1-2014 | 3.4 |

<sup>1)</sup> Can be used with LED bulb

#### Diode block

|             |          |      |
|-------------|----------|------|
| Diode block | MDB-1001 | 0.53 |
|-------------|----------|------|

Note: To be used if several lamps are to be connected to a common lamp-test pushbutton. A diode must be connected in series with each lamp. The Diode block snaps onto the lamp block or is placed at the side

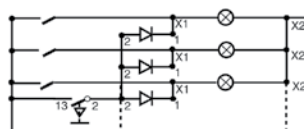


Diagram for lamp test with three Diode blocks (not intended for integrated LED bulbs)

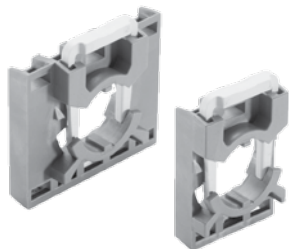
#### Single lamp blocks for front mounting, BA 9s base

| Description                               | Catalog number | Weight oz. |
|-------------------------------------------|----------------|------------|
| <p>230 V, 2 W<br/>X1 X2</p>               | MLB-1          | 0.53       |
| <p>115 V<br/>X1 X2<br/>60 V<br/>1.2 W</p> | MLB-2          | 0.60       |
| <p>230 V<br/>X1 X2<br/>130 V<br/>2 W</p>  | MLB-3          | 0.71       |
| <p>115 V<br/>X1 X2<br/>24 V<br/>LED</p>   | MLB-4          | 0.60       |
| <p>LED<br/>X1 X2<br/>24-230V~</p>         | MLB-8          | 0.53       |

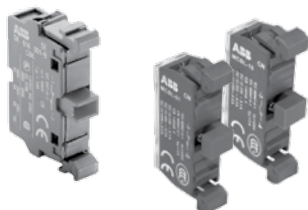
NOTE: Package order quantities will apply.

## Accessories

### Contact blocks and holders



Holders for contact block

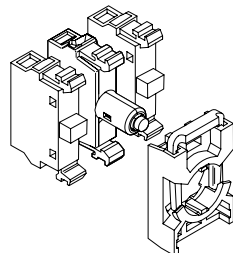
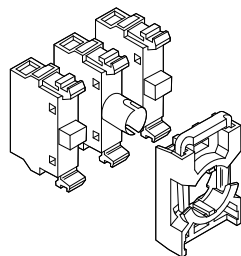
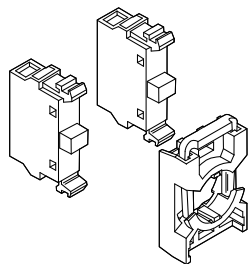


Contact block

Micro switch blocks



Double contact blocks



| Description              | Catalog number | Weight oz. |
|--------------------------|----------------|------------|
| <b>Holders</b>           |                |            |
| Holders for three blocks | MCBH-00        | 0.21       |
| Holders for five blocks* | MCBH5-00       | 0.28       |

\* Note: Double contact blocks are required on side positions

#### Single contact blocks for front mounting

|                             |         |      |
|-----------------------------|---------|------|
| 1 NO                        | MCB-10  | 0.46 |
| 1 NC                        | MCB-01  | 0.46 |
| 1 NO w/gold plated contacts | MCB-10G | 0.46 |
| 1 NC w/gold plated contacts | MCB-01G | 0.46 |

#### Micro switch blocks

|      |         |      |
|------|---------|------|
| 1 NO | MCBL-10 | 0.35 |
| 1 NC | MCBL-01 | 0.35 |

#### Double contact block for front mounting

|                            |         |      |
|----------------------------|---------|------|
| 2 NO                       | MCB-20  | 0.92 |
| 2 NC                       | MCB-02  | 0.92 |
| 1 NO + 1 NC                | MCB-11  | 0.92 |
| 2NC w/gold plated contacts | MCB-02G | 0.92 |
| 2NO w/gold plated contacts | MCB-20G | 0.92 |

Note: To be used together with MCBH5-00 when Contact blocks in position 4- and 5- are needed. Also when using 2nd lamp blocks MCBH-00 together with Selector Switch and Contact block in position 3- is needed

#### Contact blocks with holder for front mounting ①

For non-illuminated operators

|             |         |
|-------------|---------|
| 1 NC        | MCBH-01 |
| 1 NO        | MCBH-10 |
| 2 NC        | MCBH-02 |
| 2 NO        | MCBH-20 |
| 3 NC        | MCBH-03 |
| 3 NO        | MCBH-30 |
| 1 NO + 1 NC | MCBH-11 |
| 1 NO + 2 NC | MCBH-12 |
| 2 NO + 1 NC | MCBH-21 |

For illuminated operator

|                    |          |
|--------------------|----------|
| 1 LB               | MCBH-001 |
| 1 NC + 1 LB        | MCBH-011 |
| 1 NO + 1 LB        | MCBH-101 |
| 1 NO + 1 NC + 1 LB | MCBH-111 |
| 2 NO & 1 LB        | MCBH-021 |
| 2 NO & 1 LB        | MCBH-201 |

① Max. # of blocks in holder is 3.



## Accessories

### LED bulbs



LED bulbs

| Description                                                                                                                                     | Wavelength<br>nm | Luminance<br>mcd | Catalog<br>number | Weight<br>oz. |
|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------|-------------------|---------------|
| <b>LED bulbs</b>                                                                                                                                |                  |                  |                   |               |
| 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 (+). |                  |                  |                   |               |
| <b>Rated voltage 12 V, DC, rated current 15 mA, service life &gt;50 000 h</b>                                                                   |                  |                  |                   |               |
| Red                                                                                                                                             | 630              | 250              | KA2-2011          | 0.18          |
| Green                                                                                                                                           | 525              | 1000             | KA2-2012          | 0.18          |
| Yellow                                                                                                                                          | 592              | 250              | KA2-2013          | 0.18          |
| Blue                                                                                                                                            | 470              | 450              | KA2-2014          | 0.18          |
| White                                                                                                                                           | <sup>1)</sup>    | 600              | KA2-2015          | 0.18          |
| <b>Rated voltage 24 V, (AC)/DC, rated current 15 mA, service life &gt;50 000 h</b>                                                              |                  |                  |                   |               |
| Red                                                                                                                                             | 630              | 250              | KA2-2021          | 0.18          |
| Green                                                                                                                                           | 525              | 800              | KA2-2022          | 0.18          |
| Yellow                                                                                                                                          | 592              | 250              | KA2-2023          | 0.18          |
| Blue                                                                                                                                            | 470              | 400              | KA2-2024          | 0.18          |
| White                                                                                                                                           | <sup>1)</sup>    | 500              | KA2-2025          | 0.18          |
| <b>Rated voltage 36 V, (AC)/DC, rated current 12 mA, service life &gt;50 000 h</b>                                                              |                  |                  |                   |               |
| Red                                                                                                                                             | 630              | 200              | KA2-2031          | 0.18          |
| Green                                                                                                                                           | 525              | 2000             | KA2-2032          | 0.18          |
| Yellow                                                                                                                                          | 592              | 200              | KA2-2033          | 0.18          |
| Blue                                                                                                                                            | 470              | 750              | KA2-2034          | 0.18          |
| White                                                                                                                                           | <sup>1)</sup>    | 1400             | KA2-2035          | 0.18          |
| <b>Rated voltage 48 V, (AC)/DC, rated current 12 mA, service life &gt;50 000 h</b>                                                              |                  |                  |                   |               |
| Red                                                                                                                                             | 630              | 200              | KA2-2041          | 0.18          |
| Green                                                                                                                                           | 525              | 1700             | KA2-2042          | 0.18          |
| Yellow                                                                                                                                          | 592              | 240              | KA2-2043          | 0.18          |
| Blue                                                                                                                                            | 470              | 720              | KA2-2044          | 0.18          |
| White                                                                                                                                           | <sup>1)</sup>    | 1200             | KA2-2045          | 0.18          |
| <b>Rated voltage 60 V, (AC)/DC, rated current 10 mA, service life &gt;50 000 h</b>                                                              |                  |                  |                   |               |
| Red                                                                                                                                             | 630              | 160              | KA2-2051          | 0.18          |
| Green                                                                                                                                           | 525              | 1400             | KA2-2052          | 0.18          |
| Yellow                                                                                                                                          | 592              | 200              | KA2-2053          | 0.18          |
| Blue                                                                                                                                            | 470              | 600              | KA2-2054          | 0.18          |
| White                                                                                                                                           | <sup>1)</sup>    | 1000             | KA2-2055          | 0.18          |
| <b>Rated voltage 110-130 V, AC, rated current 4-6 mA, service life 25 000 h</b>                                                                 |                  |                  |                   |               |
| Red                                                                                                                                             | 630              | 60-100           | KA2-2131          | 0.18          |
| Green                                                                                                                                           | 525              | 500-850          | KA2-2132          | 0.18          |
| Yellow                                                                                                                                          | 592              | 70-120           | KA2-2133          | 0.18          |
| Blue                                                                                                                                            | 470              | 220-350          | KA2-2134          | 0.18          |
| White                                                                                                                                           | <sup>1)</sup>    | 350-600          | KA2-2135          | 0.18          |
| <b>Rated voltage 110-130 V, AC/DC, rated current 4-6 mA, service life 25 000 h</b>                                                              |                  |                  |                   |               |
| Red                                                                                                                                             | 630              | 60               | KA2-2141          | 0.18          |
| Green                                                                                                                                           | 525              | 500              | KA2-2142          | 0.18          |
| Yellow                                                                                                                                          | 592              | 70               | KA2-2143          | 0.18          |
| Blue                                                                                                                                            | 470              | 220              | KA2-2144          | 0.18          |
| White                                                                                                                                           | <sup>1)</sup>    | 350              | KA2-2145          | 0.18          |
| <b>Rated voltage 230 V, AC, rated current 4 mA, service life 25 000 h</b>                                                                       |                  |                  |                   |               |
| Red                                                                                                                                             | 630              | 60               | KA2-2221          | 0.18          |
| Green                                                                                                                                           | 525              | 500              | KA2-2222          | 0.18          |
| Yellow                                                                                                                                          | 592              | 70               | KA2-2223          | 0.18          |
| Blue                                                                                                                                            | 470              | 220              | KA2-2224          | 0.18          |
| White                                                                                                                                           | <sup>1)</sup>    | 350              | KA2-2225          | 0.18          |

**Note:** Care should be taken for DC supply where + and - must be correctly connected. This is marked X1 (+) and X2 (-) on the product.

Choose the same color on the LED as on the lamp cap.

<sup>1)</sup> X=0.31, Y=0.32 according to the ICI Chromaticity Diagram.

## Accessories

### LED and filament bulbs



LED bulbs

| Description                                                           | Wavelength<br>nm | Luminance<br>mcd | Catalog number | Weight<br>oz. |
|-----------------------------------------------------------------------|------------------|------------------|----------------|---------------|
| <b>LED bulbs continued</b>                                            |                  |                  |                |               |
| Rated voltage 230 V, AC/DC, rated current 4 mA, service life 25 000 h |                  |                  |                |               |
| Red                                                                   | 630              | 60               | KA2-2231       | 0.18          |
| Green                                                                 | 525              | 500              | KA2-2232       | 0.18          |
| Yellow                                                                | 592              | 70               | KA2-2233       | 0.18          |
| Blue                                                                  | 470              | 220              | KA2-2234       | 0.18          |
| White                                                                 | <sup>1)</sup>    | 350              | KA2-2235       | 0.18          |

**Note:** Care should be taken for DC supply where + and - must be correctly connected. This is marked X1 (+) and X2 (-) on the product.

Choose the same color on the LED as on the lamp cap.

<sup>1)</sup> X=0.31, Y=0.32 according to the ICI Chromaticity Diagram.

#### Flashing LED bulbs

Rated voltage 24 V, DC rated current 25 mA

| Description | Wavelength<br>nm | Service life<br>hours | Catalog number | Weight<br>oz. |
|-------------|------------------|-----------------------|----------------|---------------|
| Red         | 630              | 50 000                | 4950 512-1     | 0.18          |
| Green       | 565              | 50 000                | 4950 512-2     | 0.18          |
| Yellow      | 585              | 50 000                | 4950 512-3     | 0.18          |

**Note:** Care should be taken for DC supply where + and - must be correctly connected. This is marked X1 (+) and X2 (-) on the product.

Choose the same color on the LED as on the lamp cap.



Filament bulbs

#### Filament bulbs BA 9s base

| Rated voltage<br>V m AC/DC | Rated current<br>A | Rated output<br>W | Service life<br>h | Luminance<br>mcd | Catalog number | Weight<br>oz. |
|----------------------------|--------------------|-------------------|-------------------|------------------|----------------|---------------|
| 6                          | 200                | 1.2               | 10 000            | 350              | 5911 086-11    | 0.071         |
| 12                         | 100                | 1.2               | 10 000            | 203              | 5911 086-12    | 0.071         |
| 24                         | 50                 | 1.2               | 10 000            | 280              | 5911 086-13    | 0.071         |
| 30                         | 40                 | 1.2               | 10 000            | 250              | 5911 086-4     | 0.071         |
| 48                         | 42                 | 2                 | 6 000             | 500              | 5911 086-5     | 0.071         |
| 60                         | 20                 | 1.2               | 5 000             | 190              | 5911 086-14    | 0.071         |
| 110                        | 18                 | 2                 | 7 500             | 250              | 5911 086-7     | 0.071         |
| 130                        | 15                 | 2                 | 7 500             | 120              | 5911 086-15    | 0.071         |

A lamp Changing Tool is required for changing bulb.

#### Lamp changing tool

For LED bulbs and for bulbs

KA1-8072

0.071

A lamp changing tool is required for changing bulb.



Lamp changing tool

## Accessories

### LED blocks, front mounting



LED block with built in  
leakage current protection

| Description                                                                                                                            | Rated<br>Current mA | Wavelength<br>nm | Luminance<br>mcd | Catalog number | Weight<br>oz. |
|----------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------------|------------------|----------------|---------------|
| <b>LED-blocks</b>                                                                                                                      |                     |                  |                  |                |               |
| Lamp block with one diode chip integrated into lamp block. Choose the same color for the LED and the lamp cap or else use a clear cap. |                     |                  |                  |                |               |
| <b>Rated voltage 12 V, DC</b>                                                                                                          |                     |                  |                  |                |               |
| Red                                                                                                                                    | 12.0                | 620              | 320              | MLBL-00R       | 0.42          |
| Green                                                                                                                                  | 9.3                 | 520              | 1500             | MLBL-00G       | 0.42          |
| Yellow                                                                                                                                 | 12.0                | 588              | 380              | MLBL-00Y       | 0.42          |
| Blue                                                                                                                                   | 9.5                 | 468              | 450              | MLBL-00L       | 0.42          |
| White                                                                                                                                  | 9.3                 | <sup>2)</sup>    | 600              | MLBL-00W       | 0.42          |
| <b>Rated voltage 24 V, AC/DC</b>                                                                                                       |                     |                  |                  |                |               |
| Red                                                                                                                                    | 9.9                 | 620              | 250              | MLBL-01R       | 0.42          |
| Green                                                                                                                                  | 9.2                 | 520              | 1500             | MLBL-01G       | 0.42          |
| Yellow                                                                                                                                 | 9.9                 | 588              | 250              | MLBL-01Y       | 0.42          |
| Blue                                                                                                                                   | 9.3                 | 468              | 450              | MLBL-01L       | 0.42          |
| White                                                                                                                                  | 9.2                 | <sup>2)</sup>    | 600              | MLBL-01W       | 0.42          |
| <b>Rated voltage 48 V, AC/DC</b>                                                                                                       |                     |                  |                  |                |               |
| Red                                                                                                                                    | 10.0                | 620              | 260              | MLBL-02R       | 0.42          |
| Green                                                                                                                                  | 9.7                 | 520              | 1500             | MLBL-02G       | 0.42          |
| Yellow                                                                                                                                 | 10.0                | 588              | 300              | MLBL-02Y       | 0.42          |
| Blue                                                                                                                                   | 9.7                 | 468              | 450              | MLBL-02L       | 0.42          |
| White                                                                                                                                  | 9.7                 | <sup>1)</sup>    | 600              | MLBL-02W       | 0.42          |
| <b>Rated voltage 60 V, AC/DC</b>                                                                                                       |                     |                  |                  |                |               |
| Red                                                                                                                                    | 13.0                | 620              | 350              | MLBL-03R       | 0.42          |
| Green                                                                                                                                  | 12.7                | 520              | 2000             | MLBL-03G       | 0.42          |
| Yellow                                                                                                                                 | 13.0                | 588              | 400              | MLBL-03Y       | 0.42          |
| Blue                                                                                                                                   | 12.7                | 468              | 550              | MLBL-03L       | 0.42          |
| White                                                                                                                                  | 12.7                | <sup>1)</sup>    | 750              | MLBL-03W       | 0.42          |
| <b>Rated voltage 110-130 V, AC</b>                                                                                                     |                     |                  |                  |                |               |
| Red                                                                                                                                    | 8.6                 | 620              | 200              | MLBL-04R       | 0.42          |
| Green                                                                                                                                  | 8.5                 | 520              | 1200             | MLBL-04G       | 0.42          |
| Yellow                                                                                                                                 | 8.6                 | 588              | 250              | MLBL-04Y       | 0.42          |
| Blue                                                                                                                                   | 7.0                 | 468              | 400              | MLBL-04L       | 0.42          |
| White                                                                                                                                  | 7.0                 | <sup>1)</sup>    | 500              | MLBL-04W       | 0.42          |
| <b>Rated voltage 110-130 V, DC</b>                                                                                                     |                     |                  |                  |                |               |
| Red                                                                                                                                    | 9.9                 | 620              | 250              | MLBL-05R       | 0.42          |
| Green                                                                                                                                  | 9.8                 | 520              | 1500             | MLBL-05G       | 0.42          |
| Yellow                                                                                                                                 | 9.9                 | 588              | 300              | MLBL-05Y       | 0.42          |
| Blue                                                                                                                                   | 9.8                 | 468              | 450              | MLBL-05L       | 0.42          |
| White                                                                                                                                  | 9.8                 | <sup>1)</sup>    | 600              | MLBL-05W       | 0.42          |
| <b>Rated voltage 220 V, DC</b>                                                                                                         |                     |                  |                  |                |               |
| Red                                                                                                                                    | 8.0                 | 620              | 180              | MLBL-06R       | 0.42          |
| Green                                                                                                                                  | 8.0                 | 520              | 110              | MLBL-06G       | 0.42          |
| Yellow                                                                                                                                 | 8.0                 | 588              | 200              | MLBL-06Y       | 0.42          |
| Blue                                                                                                                                   | 8.0                 | 468              | 450              | MLBL-06L       | 0.42          |
| White                                                                                                                                  | 8.0                 | <sup>1)</sup>    | 600              | MLBL-06W       | 0.42          |
| <b>Rated voltage 230 V, AC</b>                                                                                                         |                     |                  |                  |                |               |
| Red                                                                                                                                    | 9.5                 | 620              | 250              | MLBL-07R       | 0.42          |
| Green                                                                                                                                  | 9.4                 | 520              | 1500             | MLBL-07G       | 0.42          |
| Yellow                                                                                                                                 | 9.5                 | 588              | 300              | MLBL-07Y       | 0.42          |
| Blue                                                                                                                                   | 8.2                 | 468              | 450              | MLBL-07L       | 0.42          |
| White                                                                                                                                  | 8.2                 | <sup>1)</sup>    | 600              | MLBL-07W       | 0.42          |

Note: Care should be taken for DC supply where + and - must be correctly connected. This is marked X1 (+) and X2 (-) on the product.

<sup>1)</sup> X=0.31, Y=0.32 according to the ICI Chromaticity Diagram.



LED block with built in  
leakage current protection

## Accessories

### LED blocks, front mounting

| Description | Rated<br>Current mA | Wavelength<br>nm | Luminance<br>mcd | Catalog number | Weight<br>oz. |
|-------------|---------------------|------------------|------------------|----------------|---------------|
|-------------|---------------------|------------------|------------------|----------------|---------------|

#### LED blocks, cont.

Lamp block with one diode chip integrated into lamp block. Choose the same color for the LED and the lamp cap or else use a clear cap.

#### Rated voltage 380 V, AC

|        |      |               |      |          |      |
|--------|------|---------------|------|----------|------|
| Red    | 10.2 | 620           | 250  | MLBL-08R | 0.42 |
| Green  | 10.2 | 520           | 1500 | MLBL-08G | 0.42 |
| Yellow | 10.2 | 582           | 300  | MLBL-08Y | 0.42 |
| Blue   | 9.1  | 468           | 450  | MLBL-08L | 0.42 |
| White  | 9.1  | <sup>1)</sup> | 600  | MLBL-08W | 0.42 |

#### Rated voltage 415 V, AC

|        |      |               |      |          |      |
|--------|------|---------------|------|----------|------|
| Red    | 11.2 | 620           | 280  | MLBL-09R | 0.42 |
| Green  | 11.2 | 520           | 1800 | MLBL-09G | 0.42 |
| Yellow | 11.2 | 588           | 350  | MLBL-09Y | 0.42 |
| Blue   | 9.9  | 468           | 500  | MLBL-09L | 0.42 |
| White  | 9.9  | <sup>1)</sup> | 650  | MLBL-09W | 0.42 |

Note: Care should be taken for DC supply where + and - must be correctly connected. This is marked X1 (+) and X2 (-) on the product.

<sup>1)</sup> X=0.31, Y=0.32 according to the ICI Chromaticity Diagram.

Rear mounted LED blocks can be found on page 7.62.

## Accessories



DIN-rail adaptor



Dummy block



30mm adaptors



Adaptor



30mm gasket



Lamp changing tool



Mounting tool



Mounting tool for power tool



Blanking plugs



Square bezels

| Description                                 | Catalog number | Weight oz. |
|---------------------------------------------|----------------|------------|
| <b>DIN-rail Adaptor</b>                     |                |            |
| DIN-rail adaptor                            | MA1-8131       | 0.71       |
| DIN-rail (adaptor) kit with one dummy block | MA1-8001       | 0.99       |

NOTE: Use with base mount blocks. See page \_\_\_\_.

### Dummy block

|                         |       |      |
|-------------------------|-------|------|
| Dummy block, rear mount | MDB-2 | 0.11 |
|-------------------------|-------|------|

Dummy blocks are used when only one contact block or a compact device is used together with the DIN-Rail Adaptor

### 30 mm Adaptors for 22 mm operator (1.5-4 mm panels)

#### For Emergency stop pushbutton ①

|               |          |      |
|---------------|----------|------|
| Black plastic | KA1-8027 | 0.25 |
| Metal         | KA1-8028 | 0.74 |

#### For pushbuttons, selector switches, pilot lights, potentiometers and buzzers:

|               |          |      |
|---------------|----------|------|
| Black plastic | KA1-8029 | 0.35 |
| Metal         | KA1-8030 | 1.2  |

#### Flush mounted adaptors (metal)

|                       |          |     |
|-----------------------|----------|-----|
| For pushbuttons       | KA1-8073 | 1.8 |
| For Selector switches | MA1-8074 | 1.8 |

### 30mm Gasket

|                                     |                 |  |
|-------------------------------------|-----------------|--|
| For 30mm adaptors for 22mm operator | 1SFA616920R8019 |  |
|-------------------------------------|-----------------|--|

### Lamp changing tool

|                             |          |       |
|-----------------------------|----------|-------|
| For LED bulbs and for bulbs | KA1-8072 | 0.071 |
|-----------------------------|----------|-------|

### Mounting tool for operator

|                                              |          |      |
|----------------------------------------------|----------|------|
| Mounting tool for tightening the locking nut | MA1-8015 | 0.74 |
| Mounting tool for power tool                 | MA1-8149 | 5.5  |

### Extra key

|                            |             |      |
|----------------------------|-------------|------|
| Ronis 455 (key code 71)    | SK616021-71 | 0.25 |
| Ronis 421 (key code 72)    | SK616021-72 | 0.25 |
| Ronis 3433-E (key code 73) | SK616021-73 | 0.25 |

### Locking nut

|                                |          |       |
|--------------------------------|----------|-------|
| Locking nut 22mm               | MA1-8019 | 0.035 |
| Locking nut 30mm w/22mm device | MA1-8134 |       |

The Locking nut can also be used with Compact Devices.

### Blanking plug

|                  |          |      |
|------------------|----------|------|
| Grey, 22mm       | MA1-8129 | 0.18 |
| Light grey, 22mm | MA1-8136 | 0.18 |
| Black, 22mm      | MA1-8130 | 0.18 |
| Black, 30mm      | MA1-8133 | 0.18 |

### Square bezel

|                |            |       |
|----------------|------------|-------|
| Black, plastic | SK616016-2 | 0.035 |
| Grey, plastic  | MA1-8124   | 0.035 |

① For use with MPMP and MPMT only

## Accessories



| Description                | Catalog number | Weight oz. |
|----------------------------|----------------|------------|
| <b>Protective membrane</b> |                |            |
| For flush button           | KA1-8052       | 0.071      |
| For extended button        | KA1-8002       | 0.071      |
| For double pushbutton      | MA1-8126       | 0.071      |



|                                                                                                                             |            |       |
|-----------------------------------------------------------------------------------------------------------------------------|------------|-------|
| <b>Protective ring</b>                                                                                                      |            |       |
| Operator for protective ring                                                                                                | SK615512-1 | 0.071 |
| Note: For flush and extended pushbuttons. To prevent accidental operation. Cannot be used together with Legend plate holder |            |       |

|                                                                                                                |          |      |
|----------------------------------------------------------------------------------------------------------------|----------|------|
| <b>Protective cover</b>                                                                                        |          |      |
| Protective cover                                                                                               | KA1-8010 | 0.28 |
| Note: For flush pushbutton. To prevent accidental operation. Cannot be used together with Legend plate holder. |          |      |



|                |          |       |
|----------------|----------|-------|
| <b>Bezel</b>   |          |       |
| For pushbutton |          |       |
| Grey plastic   | KA1-8079 | 0.071 |
| black plastic  | KA1-8022 | 0.071 |
| Chrome metal   | KA1-8021 | 0.53  |



|                     |          |       |
|---------------------|----------|-------|
| For Selector switch |          |       |
| Grey plastic        | KA1-8077 | 0.035 |
| black plastic       | KA1-8080 | 0.035 |
| Chrome metal        | KA1-8024 | 0.35  |



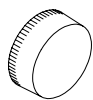
|                                                                                                                                                                                                                       |          |      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|
| <b>Shroud for emergency stop</b>                                                                                                                                                                                      |          |      |
| Yellow                                                                                                                                                                                                                | MA1-8053 | 0.71 |
| Grey                                                                                                                                                                                                                  | MA1-8128 | 0.71 |
| Note: For 40 mm Emergency stop pushbuttons and machine stop pushbuttons. To prevent accidental operation. With anti rotation tabs and slot for pad-lock and with water drainage. Not for use with plastic enclosures. |          |      |



|                                    |          |       |
|------------------------------------|----------|-------|
| <b>Shroud for pilot devices</b>    |          |       |
| Lockable shroud                    | MA1-8153 | 0.023 |
| <b>Touch guard for pushbuttons</b> |          |       |
| Touch guard                        | MA1-8152 | 0.009 |

## Accessories

### Lenses



Lens for Pilot light

| Description                    | Catalog number | Weight oz. |
|--------------------------------|----------------|------------|
| <b>Lenses for pilot lights</b> |                |            |
| Red                            | KA1-8031       | 0.071      |
| Green                          | KA1-8032       | 0.071      |
| Yellow                         | KA1-8033       | 0.071      |
| Blue                           | KA1-8034       | 0.071      |
| White                          | KA1-8035       | 0.071      |
| Clear                          | KA1-8038       | 0.071      |
| Fresnel light diffusion lens ① | KA1-8005       | 0.071      |



Flush lens for pushbutton

#### Lenses for non-illuminated pushbuttons

##### Flush – opaque

|        |          |      |
|--------|----------|------|
| Red    | KA1-8081 | 0.53 |
| Green  | KA1-8082 | 0.53 |
| Yellow | KA1-8083 | 0.53 |
| Blue   | KA1-8084 | 0.53 |
| White  | KA1-8085 | 0.53 |
| Black  | KA1-8086 | 0.53 |
| Grey   | KA1-8087 | 0.53 |
| Clear  | KA1-8088 | 0.53 |



Extended lens for pushbutton

##### Extended - opaque

|        |          |      |
|--------|----------|------|
| Red    | KA1-8091 | 0.88 |
| Green  | KA1-8092 | 0.88 |
| Yellow | KA1-8093 | 0.88 |
| Blue   | KA1-8094 | 0.88 |
| White  | KA1-8095 | 0.88 |
| Black  | KA1-8096 | 0.88 |
| Grey   | KA1-8097 | 0.88 |
| Clear  | KA1-8098 | 0.88 |

#### Lenses for illuminated pushbuttons

##### Flush – transparent

|        |          |      |
|--------|----------|------|
| Red    | KA1-8101 | 0.53 |
| Green  | KA1-8102 | 0.53 |
| Yellow | KA1-8103 | 0.53 |
| Blue   | KA1-8104 | 0.53 |
| White  | KA1-8105 | 0.53 |
| Clear  | KA1-8108 | 0.53 |

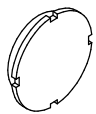
##### Extended - transparent

|        |          |      |
|--------|----------|------|
| Red    | KA1-8111 | 0.88 |
| Green  | KA1-8112 | 0.88 |
| Yellow | KA1-8113 | 0.88 |
| Blue   | KA1-8114 | 0.88 |
| White  | KA1-8115 | 0.88 |
| Clear  | KA1-8118 | 0.88 |

① Light diffusing lens insert is placed between the bulb and the lens.

## Text cap inserts

| Legend                                                                            | Cap color<br>① | Suffix<br>code ② | Flush button<br>catalog<br>number | Extended button<br>catalog<br>number | Pilot light<br>catalog<br>number |
|-----------------------------------------------------------------------------------|----------------|------------------|-----------------------------------|--------------------------------------|----------------------------------|
|  | White          | C82              | 1SFA616901R9036                   | —                                    | —                                |
| Start                                                                             | White          | C67              | 1SFA616901R2030                   | 1SFA616902R2030                      | 1SFA616903R2030                  |
| START                                                                             | Green          | C5               | 1SFA616906R1042                   | —                                    | —                                |
|                                                                                   | Black          | C81              | 1SFA616908R1042                   | —                                    | —                                |
| On                                                                                | White          | C68              | 1SFA616901R1020                   | 1SFA616902R1020                      | 1SFA616903R1020                  |
| ON                                                                                | White          | C69              | 1SFA616901R1039                   | —                                    | 1SFA616903R1039                  |
|                                                                                   | Green          | C70              | 1SFA616906R1039                   | —                                    | —                                |
|                                                                                   | Black          | C1               | 1SFA616908R1039                   | —                                    | —                                |
| Off                                                                               | White          | C71              | 1SFA616901R1019                   | 1SFA616902R1019                      | 1SFA616903R1019                  |
| OFF                                                                               | White          | C72              | —                                 | 1SFA616902R1040                      | —                                |
|                                                                                   | Red            | C73              | —                                 | 1SFA616905R1040                      | —                                |
|                                                                                   | Black          | C2               | 1SFA616908R1040                   | 1SFA616909R1040                      | —                                |
| Stop                                                                              | White          | C74              | 1SFA616901R1031                   | 1SFA616902R1031                      | 1SFA616903R1031                  |
| STOP                                                                              | Red            | C4               | 1SFA616904R1047                   | 1SFA616905R1047                      | —                                |
| Reset                                                                             | White          | C75              | 1SFA616901R1025                   | 1SFA616902R1025                      | 1SFA616903R1025                  |
| Blank                                                                             | White          | C15              | 1SFA616901R9000                   | 1SFA616902R9000                      | 1SFA616903R9000                  |
|                                                                                   | Green          | CG               | 29491468-2                        | 29491469-2                           | —                                |
| UP                                                                                | Green          | C11              | 1SFA616906R1043                   | —                                    | —                                |
| DOWN                                                                              | Green          | C12              | 1SFA616906R1044                   | —                                    | —                                |
| OPEN                                                                              | White          | C16              | 1SFA616901R1045                   | —                                    | —                                |
|                                                                                   | Green          | C19              | 1SFA616906R1045                   | —                                    | —                                |
| CLOSE                                                                             | White          | C17              | 1SFA616901R1046                   | —                                    | —                                |
|                                                                                   | Green          | C20              | 1SFA616906R1046                   | —                                    | —                                |
| REV                                                                               | Green          | C6               | 1SFA616906R1048                   | —                                    | —                                |
| FWD                                                                               | Green          | C7               | 1SFA616906R1049                   | —                                    | —                                |
| SLOW                                                                              | Green          | C8               | 1SFA616906R1050                   | —                                    | —                                |
| FAST                                                                              | Green          | C9               | 1SFA616906R1051                   | —                                    | —                                |
| JOG                                                                               | Green          | C10              | 1SFA616906R1052                   | —                                    | —                                |
| RESET                                                                             | Black          | C3               | 1SFA616908R1041                   | —                                    | —                                |
| LATCH                                                                             | White          | C18              | 1SFA616901R1053                   | —                                    | —                                |



Flush  
pushbutton



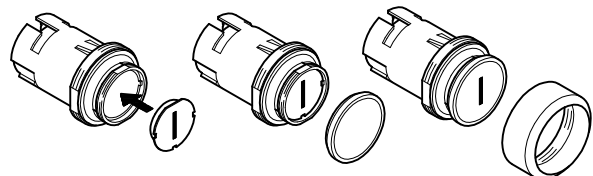
Extended  
pushbutton



Pilot light



Examples of inserts



1

2

3

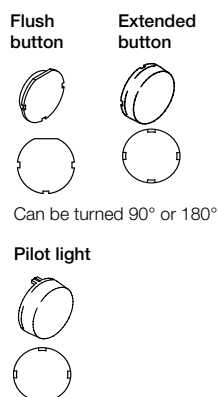
Insert assembly

① Illuminated pushbuttons and pilot lights must use white insert.  
② Add suffix code to end of the catalog number.



## Text cap inserts

### Text caps for illuminated pushbuttons and pilot lights



| Text/Symbol <sup>①</sup> | Cap color | Suffix <sup>②</sup> | Flush button<br>Catalog No. | Extended button<br>Catalog No. | Pilot light<br>Catalog No. |
|--------------------------|-----------|---------------------|-----------------------------|--------------------------------|----------------------------|
| →→                       | White     | C14                 | 1SFA616901R9006             | 1SFA616902R9006                | 1SFA616903R9006            |
| ○                        | White     | C21                 | 1SFA616901R9004             | 1SFA616902R9004                | 1SFA616903R9004            |
|                          | Red       | C22                 | 1SFA616904R9004             | 1SFA616905R9004                | –                          |
|                          | Black     | C23                 | 1SFA616908R9004             | –                              | –                          |
| I                        | White     | C24                 | 1SFA616901R9002             | 1SFA616902R9002                | 1SFA616903R9002            |
|                          | Green     | C25                 | 1SFA616906R9002             | –                              | –                          |
|                          | Black     | C26                 | 1SFA616908R9002             | –                              | –                          |
| II                       | White     | C27                 | 1SFA616901R9003             | 1SFA616902R9003                | 1SFA616903R9003            |
|                          | Green     | C28                 | 1SFA616906R9003             | –                              | –                          |
|                          | Black     | C29                 | 1SFA616908R9003             | –                              | –                          |
| III                      | White     | C30                 | 1SFA616901R9028             | 1SFA616902R9028                | –                          |
|                          | Black     | C31                 | 1SFA616908R9028             | –                              | –                          |
| +                        | White     | C32                 | 1SFA616901R9011             | 1SFA616902R9011                | –                          |
|                          | Green     | C33                 | 1SFA616906R9011             | –                              | –                          |
|                          | Black     | C34                 | 1SFA616908R9011             | –                              | –                          |
| –                        | White     | C35                 | 1SFA616901R9012             | –                              | –                          |
|                          | Red       | C36                 | 1SFA616904R9012             | –                              | –                          |
|                          | Black     | C37                 | 1SFA616908R9012             | –                              | –                          |
| ↑                        | White     | C38                 | 1SFA616901R9005             | 1SFA616902R9005                | 1SFA616903R9005            |
|                          | Black     | C39                 | 1SFA616908R9005             | –                              | –                          |
| ↗                        | White     | C40                 | 1SFA616901R9014             | 1SFA616902R9014                | –                          |
|                          | Black     | C41                 | 1SFA616908R9014             | –                              | –                          |
| ↔                        | White     | C42                 | 1SFA616901R9015             | 1SFA616902R9015                | –                          |
|                          | Black     | C43                 | 1SFA616908R9015             | –                              | –                          |
| ↔↔                       | White     | C44                 | 1SFA616901R9016             | 1SFA616902R9016                | –                          |
|                          | Black     | C45                 | 1SFA616908R9016             | –                              | –                          |
| →I                       | White     | C46                 | 1SFA616901R9017             | 1SFA616902R9017                | –                          |
|                          | Black     | C47                 | 1SFA616908R9017             | –                              | –                          |
| ⊕                        | White     | C47                 | 1SFA616901R9018             | 1SFA616902R9018                | –                          |
|                          | Black     | C48                 | 1SFA616908R9018             | –                              | –                          |
| ●                        | White     | C49                 | 1SFA616901R9019             | 1SFA616902R9019                | –                          |
|                          | Black     | C50                 | 1SFA616908R9019             | –                              | –                          |
| ⊙                        | White     | C51                 | 1SFA616901R9020             | 1SFA616902R9020                | –                          |
|                          | Black     | C52                 | 1SFA616908R9020             | –                              | –                          |
| ✋                        | White     | C53                 | 1SFA616901R9021             | 1SFA616902R9021                | –                          |
|                          | Black     | C54                 | 1SFA616908R9021             | –                              | –                          |
| ⚡                        | White     | C55                 | 1SFA616901R9022             | 1SFA616902R9022                | –                          |
|                          | Black     | C56                 | 1SFA616908R9022             | –                              | –                          |
| ⚡⚡                       | White     | C57                 | 1SFA616901R9023             | 1SFA616902R9023                | –                          |
|                          | Black     | C58                 | 1SFA616908R9023             | –                              | –                          |
| ⚡                        | White     | C59                 | 1SFA616901R9024             | 1SFA616902R9024                | –                          |
|                          | Black     | C60                 | 1SFA616908R9024             | –                              | –                          |
| ↑                        | White     | C61                 | 1SFA616901R9025             | 1SFA616902R9025                | –                          |
|                          | Black     | C62                 | 1SFA616908R9025             | –                              | –                          |
| ↓                        | White     | C63                 | 1SFA616901R9026             | 1SFA616902R9026                | –                          |
|                          | Black     | C64                 | 1SFA616908R9026             | –                              | –                          |
| ⚡                        | White     | C65                 | 1SFA616901R9027             | 1SFA616902R9027                | –                          |
|                          | Black     | C66                 | 1SFA616908R9027             | –                              | –                          |

① Use only white caps for illuminated pushbutton and pilot lights.

② Add suffix code to end of the catalog number.

## Technical data

### Standards and approvals

|                    |                                                                                                                                                                        |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IEC / EN 60947-1   | Low-Voltage Switchgear and Controlgear - Part 1: General rules                                                                                                         |
| IEC / EN 60947-5-1 | Low-Voltage Switchgear and Controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices                          |
| IEC / EN 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 / EN 60073     | Basic and safety principles for man-machine interface, marking and identification - Coding principles for indicators and actuators                                     |
| IEC / 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                                    |
| DIN 40050-9        | Road vehicles; Degrees of Protection (IP-code); protection against foreign objects; water and contact; electrical equipment                                            |
| UL 508             | Industrial Control Equipment                                                                                                                                           |
| CSA C22.2 No 14    | Industrial Control Equipment                                                                                                                                           |

### Environmental data

#### Degrees of protection

| Operators                                   | IEC/EN DIN    | UL/CSA                                |
|---------------------------------------------|---------------|---------------------------------------|
| Pushbutton: MP *                            | IP66          | Catalog number 1, 3R, 4, 4X, 12, 13   |
| Double pushbutton: MPD *                    | IP66          | Catalog number 1, 3R, 4, 4X, 12, 13   |
| Mushroom pushbutton: MPM *                  | IP66          | Catalog number 1, 3R, 4, 4X, 12, 13   |
| Emergency Stop: MPMT/P *                    | IP66          | Catalog number 1, 3R, 4, 4X, 12, 13   |
| Selector Switch: M2SS/M3SS *                | IP66          | Catalog number 1, 3R, 4, 4X, 12, 13   |
| Key-operated Selector Switch: M2SSK/M3SSK * | IP66          | Catalog number 1, 3R, 4, 4X, 12       |
| Toggle Switch: MTS2/MTS3 *                  | IP66          | Catalog number 1, 3R, 4, 4X, 12, 13   |
| Extreme Duty pushbutton: KP6                | -             | Catalog number 1, 3R, 4, 4X           |
| Reset pushbutton: KPR *                     | IP 66         | Catalog number 1, 3R, 4, 4X, 12, 13   |
| Joystick: MJS                               | IP66, 67, 69K | Catalog number 1, 4X (indoor), 12, 13 |
| Pilot lights: ML                            | IP66          | Catalog number 1, 3R, 4, 4X, 12, 13   |
| Buzzer: KB                                  | IP65          | Catalog number 4X                     |
| Potentiometer: KT *                         | IP66          | Catalog number 1, 3R, 4, 4X, 12, 13   |
| Contact block and Transformer block         | IP20          | -                                     |
| Plastic Enclosures                          | IP66          | Catalog number 1, 3R, 4, 4X, 12, 13   |
| Metallic Enclosures                         | IP66, 67, 69K | -                                     |

#### Temperature

|                                      |               |
|--------------------------------------|---------------|
| Ambient temperature during operation | -25 to +70 °C |
| Storage temperature                  | -40 to +85 °C |

\* With Chrome plastic bezel IP66 Catalog number 1, 12, 13

Please note that specified degree of protection is for operator mounted on panel. If other items are mounted in between, please make sure that they are correctly sealed.

### Technical Data

#### Terminals

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

|                       |                                                                                 |
|-----------------------|---------------------------------------------------------------------------------|
| Connectable Area      | min. 1 x 0.5 mm <sup>2</sup> /AWG 20<br>max. 2 x 2.5 mm <sup>2</sup> /2 x AWG14 |
| Tightening Torque     |                                                                                 |
| Operators Locking Nut | Min. 2 Nm / Max. 2.3 Nm                                                         |
| Cable Terminals       | 0.9 Nm                                                                          |

#### Material

No ozone depleting substances in the products.

All front of panel plastic components are made of polycarbonate

|                  |                                                                                                                                            |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| PC Polycarbonate | High impact strength, good outdoor resistance. Chemical resistance (see table below)                                                       |
| 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 high 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.                                                                       |

#### Chemical Resistance for Polycarbonate

| Chemical Class           | Effects                                                                                                                                                                      |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Acids                    | No significant effect under most typical conditions of concentration and temperature                                                                                         |
| Alcohols and Alkalis     | Generally compatible at low concentration and room temperature. Higher concentrations and elevated temperatures can result in etching and attack evidenced by decomposition. |
| Aliphatic Hydrocarbons   | Generally compatible                                                                                                                                                         |
| Amines                   | Surface crystallization and chemical attack. Avoid.                                                                                                                          |
| Aromatic Hydrocarbons    | Partial solvents and severe stress cracking agents (i.e., xylene, toluene). Avoid.                                                                                           |
| Detergents and Cleaners  | Mild soap solutions are generally compatible. Strong alkaline materials should be avoided.                                                                                   |
| Esters                   | Cause severe crystallization. Partial solvents. Avoid.                                                                                                                       |
| Greases and Oils         | Pure petroleum Catalog numbers generally compatible. Many additives used with them are not.                                                                                  |
| Halogenated Hydrocarbons | Solvents. Avoid.                                                                                                                                                             |
| Ketones                  | Cause severe crystallization and stress cracking. Partial solvents. Avoid.                                                                                                   |
| Silicone Oil and Greases | Generally compatible up to 85 °C.                                                                                                                                            |



### Approvals

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

For detail information please contact ABB

## Technical data

### Electrical data

#### Standard contact blocks

Self cleaning silver contacts, NC contact with positive opening. At voltages and currents below 24 V and 5.6 mA we recommend our Micro Switch blocks.

#### Ratings as per IEC 60947-5-1

|                                                                 |                                                  |                          |  |
|-----------------------------------------------------------------|--------------------------------------------------|--------------------------|--|
| Rated Insulation Voltage, $U_i$                                 |                                                  | 690 V                    |  |
| Rated Thermal Current, $I_{th}$                                 |                                                  | 10 A                     |  |
| Rated Operational Current, $I_e$<br>Utilization category AC 15, | at: 120 V<br>at: 230 V<br>at: 400 V<br>at: 690 V | 8 A<br>6 A<br>4 A<br>2 A |  |
| Rated Operational Current, $I_e$<br>utilisation category DC 13, | at: 24 V<br>at: 125 V<br>at: 250 V               | 5 A<br>1.1 A<br>0.55 A   |  |

#### Ratings as per UL, CSA, NEMA

|                           |                                                  |                              |                                                  |                                      |
|---------------------------|--------------------------------------------------|------------------------------|--------------------------------------------------|--------------------------------------|
|                           |                                                  | A600<br>AC                   |                                                  | Q600<br>DC                           |
| Rated Insulation Voltage  |                                                  | 600 V                        |                                                  | 600 V                                |
| Rated Thermal Current     |                                                  | 10 A                         |                                                  | 2.5 A                                |
| Rated Operational Current | at: 120 V<br>at: 240 V<br>at: 480 V<br>at: 600 V | 6 A<br>3 A<br>1.5 A<br>1.2 A | at: 125 V<br>at: 250 V<br>at: 480 V<br>at: 600 V | 0.55 A<br>0.27 A<br>0.10 A<br>0.10 A |

**Contact resistance** < 25 mΩ

**Compulsory function test** at: 5V, 16 mA

#### Max. number of contact blocks per operator

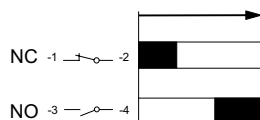
The Contact blocks can be stacked in max two levels on the 3- block holder. Only one level is accepted on the 5-block holder.

|                                                                                                                                                    |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------|---|
| pushbutton, Toggle Switch, Mushroom pushbutton,<br>Double pushbutton, Selector Switch, Key-operated<br>Selector Switch and Emergency Stop Operator | 6 |
| Joystick                                                                                                                                           | 8 |

#### Short circuit protection

Max. fuse at 1 kA | gG 16A

#### Diagram for make-and-break contact



■ = Closed contact

#### Micro Switch block / Ratings as per IEC 60947-5-1

|                                                                 |           |       |
|-----------------------------------------------------------------|-----------|-------|
| Rated Insulation Voltage, $U_i$                                 |           | 125 V |
| Rated Thermal Current, $I_{th}$                                 |           | 3 A   |
| Rated Operational Current, $I_e$<br>utilisation category AC 14, | at: 125 V | 0.5 A |
| Rated Operational Current, $I_e$<br>utilization category DC 13, | at: 24 V  | 0.3 A |
| Rated Operational Current, $I_e$<br>utilization category DC 12, | at: 24 V  | 0.1 A |

#### Minimum Switching Capacity

|                            |         |        |
|----------------------------|---------|--------|
| Standard Contact blocks    | 24 V DC | 5.6 mA |
| Gold plated Contact blocks | 5 V DC  | 12 mA  |
|                            | 12 V DC | 1 mA   |
| Micro Switch blocks        | 3 V DC  | 1 mA   |

#### Ratings as per UL 508

|  |          |       |
|--|----------|-------|
|  | 125 V AC | 3 A   |
|  | 60 V DC  | 0.2 A |
|  | 48 V DC  | 0.1 A |

### Mechanical data

#### Mechanical life

|                                                                                    |  |                       |
|------------------------------------------------------------------------------------|--|-----------------------|
| Standard Contact blocks                                                            |  | 10 million operations |
| pushbuttons, Momentary Mushroom pushbutton                                         |  | 2 million operations  |
| Selector Switches<br>Present standard<br>(no operation of center contact)          |  | 500 000 operations    |
| With operation of center contact                                                   |  | 250 000 operations    |
|                                                                                    |  | 150 000 operations    |
| Maintained Mushroom pushbutton, Key-operated Selector Switch and Double pushbutton |  | 500 000 operations    |
| Emergency Stop                                                                     |  | 100 000 operations    |
| Toggle Switch                                                                      |  | 1 million operations  |
| Joystick                                                                           |  | 500 000 operations    |
|                                                                                    |  | 400 000 operations    |
|                                                                                    |  | 300 000 operations    |

## Technical data

### Lamp block ratings as per IEC 60 947-5-1

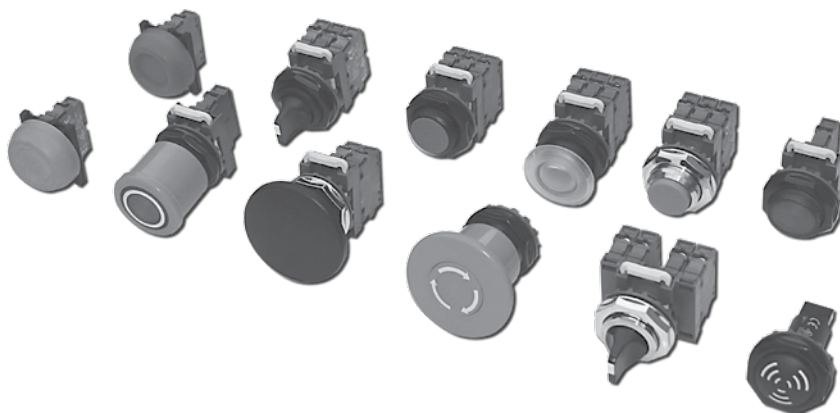
|                          |       |
|--------------------------|-------|
| Rated Insulation Voltage | 230 V |
| Base                     | BA 9s |
| Permissible power, up to | 2 W   |

### Transformer block

|                                                              |         |
|--------------------------------------------------------------|---------|
| Suitable for Filament bulb 6 or 24 V AC, 1.2 W and LED 24 V. |         |
| Rated Power                                                  | 1.5 W   |
| Rated Insulation Voltage acc. to IEC 70 °C (DT)              | Class E |

### LED bulbs

|                                                                                                                                 |                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Service Life for LED bulbs means number of service hours until the brightness has been reduced down 50 %. Service Life 50 000 h |                                                                            |
| Color of white LED                                                                                                              | x=0.31 Y=0.32 means the position of color in the ICI Chromaticity Diagram  |
| Voltage Tolerance on LED bulbs                                                                                                  | -30 to +10 % voltage is acceptable without affecting the Service Life      |
| Voltage Peaks on LED bulbs                                                                                                      | Voltage Peaks up to 1000 V Current Peaks up to 500 mA during a few msec    |
| Glowing light                                                                                                                   | All integrated LED bulbs have a function built in to cut leakage currents. |



# Modular Range, 30mm Pilot devices

### General construction

- Snap-on features reduce installation time
- Bezels: black plastic or chrome metal
- Contact block holder features rear mounting with quick-release locking mechanism for high security
- Buttons available in several colors
- Engraved text caps available
- Custom-specific markings on request
- UL File# E76003
- CSA File# LR19700

### Operators

- Pushbuttons, illuminated and non-illuminated
- Mushroom pushbuttons, illuminated and non-illuminated, 40mm and 60mm diameter
- Emergency stop pushbuttons, illuminated and non-illuminated, twist or pull release
- Selector switches, illuminated and non-illuminated, 2- or 3-position, short or long handle
- Key-operated selector switches, 2- or 3-position
- Toggle switches, 2- or 3-position

### Contact blocks

- Quick-mount, quick release contact block holder for fast and easy assembly/disassembly
- NO & NC contact blocks are color-coded for easy identification: Green = NO; Red = NC
- Silver-tipped contacts
- Wiping action for high reliability
- Low energy gold-plated contact blocks
- Contact block holder for three or five blocks in a single row

### Pilot lights

- Full voltage, resistor and transformer
- LED and filament bulbs available

## General information Mounting

### Exploded view

#### Contact block

Single pole with making or breaking contact

#### Holder

Available either for three or five blocks in one single row. Additional blocks can be stacked on holders for three blocks.

#### Legend plates

Of aluminum with slots that guide the legend plate and the operator into the correct position.

#### Lamp block

Illuminated pushbuttons, illuminated selector switches and pilot lights have a lamp block in the center position of the holder.

#### Operator

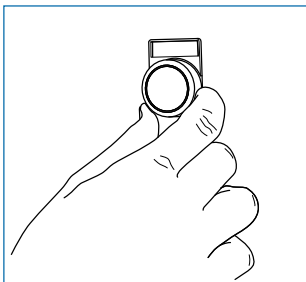
Buttons, lenses and handles in several colors. Illuminated or non-illuminated.

#### Five block holder

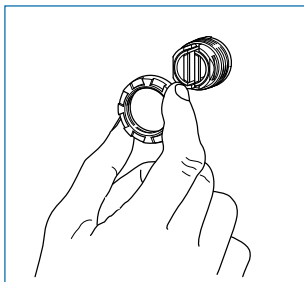
#### Bezels

Pushbuttons, selector switches and toggle switches with bezel in black plastic, chrome metal are available.

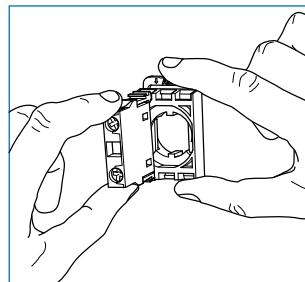
### Easy to mount



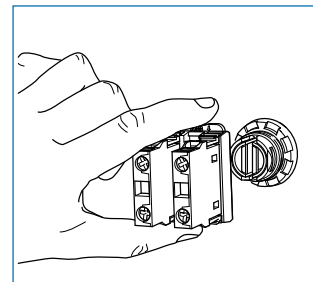
The operator is to be inserted from the front....



...and secured at the back with a nut.

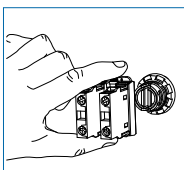
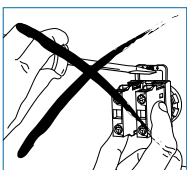


The contact blocks/lamp block are then snapped on to the holder...



...and the holder snaps on to the operator.

### ...and to remove



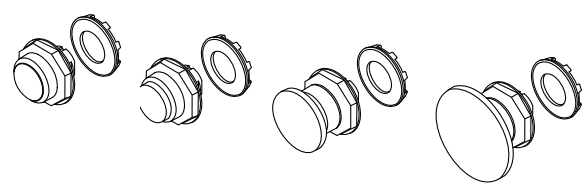
Press down the spring on the holder and pull the holder from the actuator.

# Selection guide

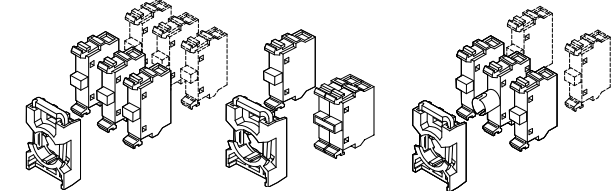
**Pilot Devices**  
Modular Range  
Components, 30mm

7

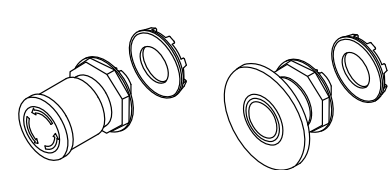
## Pushbuttons and Mushroom pushbuttons



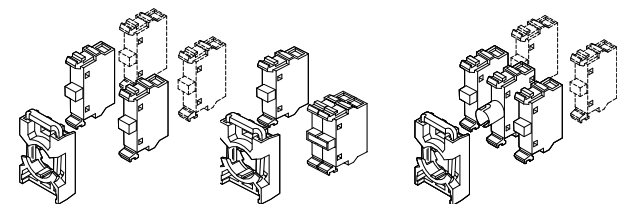
### Contact block/lamp block combinations



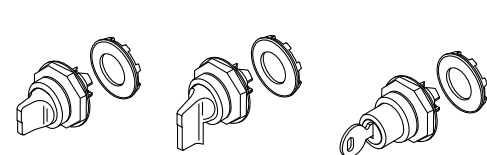
## Emergency stop pushbuttons



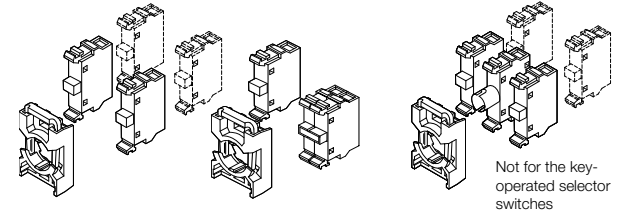
### Contact block/lamp block combinations



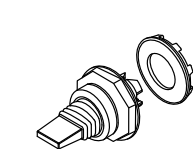
## Selector switches



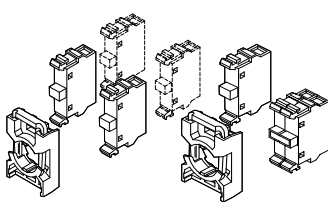
### Contact block/lamp block combinations



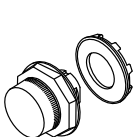
## Toggle switches



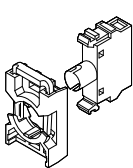
### Contact block combinations



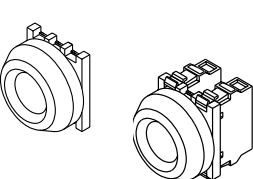
## Pilot lights



### Lamp block combination



## Extreme duty pushbuttons



## Flush and extended pushbuttons

### Non-illuminated and illuminated

### Momentary and maintained

#### How to order non-illuminated:

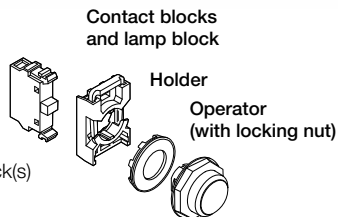
**Alt.1** • Operator  
+ Holder  
+ Contact block(s)

**Alt.2** • Operator  
+ Holder with Contact block(s)

#### How to order illuminated:

**Alt.1** • Operator  
+ Holder  
+ Contact block(s)  
+ LED/lamp block

**Alt.2** • Operator  
+ Holder with Contact block(s)  
and lamp block

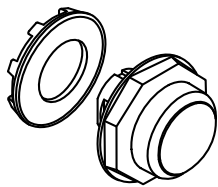


| Δ Non-illuminated button color |         | ‡ Illuminated button color |         |
|--------------------------------|---------|----------------------------|---------|
| R Red                          | G Green | R Red                      | G Green |
| Y Yellow                       | L Blue  | Y Yellow                   | L Blue  |
| W White                        | B Black | W White                    | B Black |
| C Clear                        |         |                            |         |

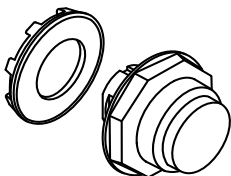
To select button color, substitute the Δ or the ‡ in the catalog number with the above color letter code.  
EX: G1MP1-10R (for a red button).

NOTE: No contact block in center position, reserved for LED/lamp block  
For contact blocks, holders & LED lamp blocks, see Accessories pages 7.54 - 7.58.

7



Flush



Extended

#### Non-illuminated

| Description                                                                                                        | Catalog number                                   |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| <b>Black plastic bezel</b><br>Flush, momentary<br>Flush, maintained<br>Extended, momentary<br>Extended, maintained | G1MP1-10Δ<br>G1MP2-10Δ<br>G1MP3-10Δ<br>G1MP4-10Δ |
| <b>Chrome bezel</b><br>Flush, momentary<br>Flush, maintained<br>Extended, momentary<br>Extended, maintained        | G2MP1-30Δ<br>G2MP2-30Δ<br>G2MP3-30Δ<br>G2MP4-30Δ |

#### Illuminated<sup>①</sup>

| Description                                                                                                        | Catalog number                                   |
|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| <b>Black plastic bezel</b><br>Flush, momentary<br>Flush, maintained<br>Extended, momentary<br>Extended, maintained | G1MP1-11‡<br>G1MP2-11‡<br>G1MP3-11‡<br>G1MP4-11‡ |
| <b>Chrome bezel</b><br>Flush, momentary<br>Flush, maintained<br>Extended, momentary<br>Extended, maintained        | G2MP1-31‡<br>G2MP2-31‡<br>G2MP3-31‡<br>G2MP4-31‡ |

① No contact block in the center position.

② Lamp block MLB-1. Bulb not included. Other lamp block see Accessories, bulb max 1.2 W.



## Mushroom pushbuttons

### Non-illuminated and illuminated

### Momentary

#### How to order non-illuminated:

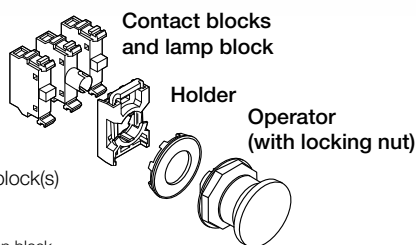
**Alt.1** • Operator  
+ Holder  
+ Contact block(s)

**Alt.2** • Operator  
+ Holder with Contact block(s)

#### How to order illuminated:

**Alt.1** • Operator  
+ Holder  
+ Contact block(s)  
+ LED/lamp block

**Alt.2** • Operator  
+ Holder with Contact block(s)  
and lamp block



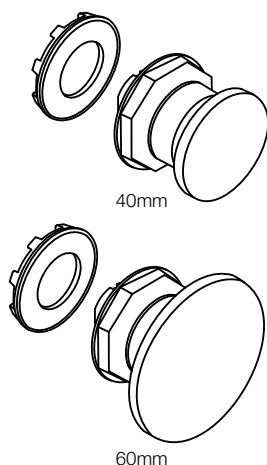
| Δ Non-illuminated button color | ‡ Illuminated button color |
|--------------------------------|----------------------------|
| <b>R</b> Red                   | <b>R</b> Red               |
| <b>Y</b> Yellow                | <b>Y</b> Yellow            |
| <b>B</b> Black                 | <b>G</b> Green             |

To select button color, substitute the Δ or the ‡ in the catalog number with the above color letter code.

EX: G1MPM1-10R (for a red button).

NOTE: No contact block in center position, reserved for LED/lamp block.  
For contact blocks, holders & LED lamp blocks, see Accessories pages 7.54 - 7.58.

7



#### Non-illuminated

| Description                                | Catalog number           |
|--------------------------------------------|--------------------------|
| <b>Black plastic bezel</b><br>40mm<br>60mm | G1MPM1-10Δ<br>G1MPM2-10Δ |
| <b>Chrome bezel</b><br>40mm<br>60mm        | G2MPM1-30Δ<br>G2MPM2-30Δ |

#### Illuminated ①

| Description                                | Catalog number           |
|--------------------------------------------|--------------------------|
| <b>Black plastic bezel</b><br>40mm<br>60mm | G1MPM1-11‡<br>G1MPM2-11‡ |
| <b>Chrome bezel</b><br>40mm<br>60mm        | G2MPM1-31‡<br>G2MPM2-31‡ |

① No contact block in the center position

② Lamp block MLB-1. Bulb not included. Other lamp block see Accessories, bulb max 1.2 W.

## Emergency stop pushbuttons

### Non-illuminated and illuminated

### 30mm, 40mm & 60mm head

#### How to order non-illuminated:

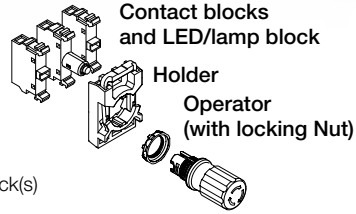
**Alt.1** • Operator  
+ Holder  
+ Contact block(s)

**Alt.2** • Operator  
+ Holder with Contact block(s)

#### How to order illuminated:

**Alt.1** • Operator  
+ Holder  
+ Contact block(s)  
+ LED/lamp block

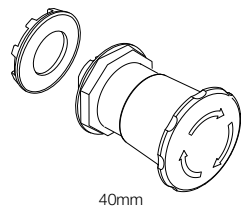
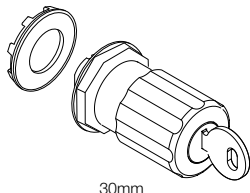
**Alt.2** • Operator  
+ Holder with Contact block(s)  
and LED/lamp block



NOTE: No contact block in center position, reserved for LED/lamp block.  
For contact blocks, holders & LED lamp blocks, see Accessories pages 7.54 - 7.58.

7

Fulfills IEC 60947-5-5



#### Operator: Emergency Stop

| Description                |                                         | Catalog number |
|----------------------------|-----------------------------------------|----------------|
| <b>Non-Illuminated</b>     |                                         |                |
| <b>30mm</b>                |                                         |                |
| <b>Black Plastic Bezel</b> |                                         |                |
| Red                        | Twist release                           | G1MPET3-10R    |
| Red                        | Key release (Key code 71, Ronis 455)    | G1MPEK3-11R    |
| Red                        | Key release (Key code 72, Ronis 421)    | G1MPEK3-12R    |
| Red                        | Key release (Key code 73, Ronis 3433-E) | G1MPEK3-13R    |
| <b>Chrome Bezel</b>        |                                         |                |
| Red                        | Twist release                           | G2MPET3-10R    |
| Red                        | Key release (Key code 71, Ronis 455)    | G2MPEK3-11R    |
| Red                        | Key release (Key code 72, Ronis 421)    | G2MPEK3-12R    |
| Red                        | Key release (Key code 73, Ronis 3433-E) | G2MPEK3-13R    |
| <b>40mm</b>                |                                         |                |
| <b>Black Plastic Bezel</b> |                                         |                |
| Red                        | Twist release                           | G1MPET4-10R    |
| Red                        | Key release (Key code 71, Ronis 455)    | G1MPEK4-11R    |
| Red                        | Key release (Key code 72, Ronis 421)    | G1MPEK4-12R    |
| Red                        | Key release (Key code 73, Ronis 3433-E) | G1MPEK4-13R    |
| <b>Chrome Bezel</b>        |                                         |                |
| Red                        | Twist release                           | G2MPET4-10R    |
| Red                        | Key release (Key code 71, Ronis 455)    | G2MPEK4-11R    |
| Red                        | Key release (Key code 72, Ronis 421)    | G2MPEK4-12R    |
| Red                        | Key release (Key code 73, Ronis 3433-E) | G2MPEK4-13R    |
| <b>Illuminated</b>         |                                         |                |
| <b>40mm</b>                |                                         |                |
| <b>Black Plastic Bezel</b> |                                         |                |
| Red                        | Twist release                           | G1MPMT3-11R    |
| <b>Chrome Bezel</b>        |                                         |                |
| Red                        | Twist release                           | G2MPMT3-11R    |
| <b>60mm</b>                |                                         |                |
| <b>Black Plastic Bezel</b> |                                         |                |
| Red                        | Twist release                           | G1MPMT4-11R    |
| <b>Chrome Bezel</b>        |                                         |                |
| Red                        | Twist release                           | G2MPMT4-11R    |

## Pull release operators

### Non-illuminated and illuminated

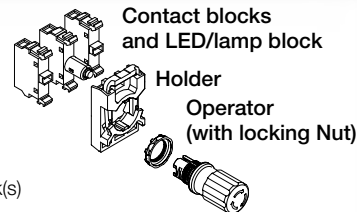
### 30mm, 40mm & 60mm head

#### How to order non-illuminated:

- Alt.1** • Operator  
+ Holder  
+ Contact block(s)
- Alt.2** • Operator  
+ Holder with Contact block(s)

#### How to order illuminated:

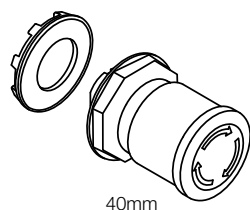
- Alt.1** • Operator  
+ Holder  
+ Contact block(s)  
+ LED/lamp block
- Alt.2** • Operator  
+ Holder with Contact block(s)  
and LED/lamp block



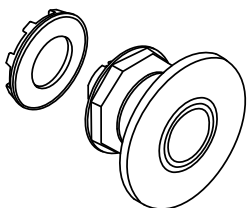
NOTE: No contact block in center position, reserved for LED/lamp block.  
For contact blocks, holders & LED lamp blocks, see Accessories pages 7.54 - 7.58.

#### Fulfills IEC 60947-5-5

#### Operator: Twist or pull release operators



40mm



60mm

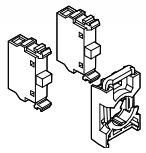
|                            |               | Description | Catalog number |
|----------------------------|---------------|-------------|----------------|
| <b>Non-Illuminated</b>     |               |             |                |
| <b>30mm</b>                |               |             |                |
| <b>Black Plastic Bezel</b> |               |             |                |
| Red                        | Pull release  |             | G1MPEP3-10R    |
| <b>Chrome bezel</b>        |               |             |                |
| Red                        | Pull release  |             | G2MEP3-10R     |
| <b>40mm</b>                |               |             |                |
| <b>Black Plastic Bezel</b> |               |             |                |
| Red                        | Pull release  |             | G1MPEP4-10R    |
| <b>Chrome Bezel</b>        |               |             |                |
| Red                        | Twist release |             | G2MPET4-10R    |
| <b>Illuminated</b>         |               |             |                |
| <b>40mm</b>                |               |             |                |
| <b>Black Plastic Bezel</b> |               |             |                |
| Red                        | Pull release  |             | G1MPMP3-11R    |
| <b>Chrome bezel</b>        |               |             |                |
| Red                        | Pull release  |             | G2MPMP3-11R    |
| <b>60mm</b>                |               |             |                |
| <b>Black Plastic Bezel</b> |               |             |                |
| Red                        | Pull release  |             | G1MPMP4-11R    |
| <b>Chrome Bezel</b>        |               |             |                |
| Red                        | Twist release |             | G2MPMP4-11R    |

## Two position selector switches Non-illuminated

### How to order:

- Alt.1** • Operator  
+ Holder  
+ Contact block(s)  
+ LED/lamp block

- Alt.2** • Operator  
+ Holder with Contact block(s)  
and LED/lamp block



Contact blocks and  
LED/lamp block

Holder

Operator  
(with locking nut)

Bezel

Δ Non-illuminated handle color

R Red

B Black

U Grey

To select handle color,  
substitute the Δ in the catalog  
number with the above color  
letter code.  
EX: G1M2SS1-10ΔR(for a red  
button).

NOTE: No contact block in center position, reserved for LED/lamp block.  
For contact blocks & holders, see Accessories pages 7.54.

### Non-illuminated

Description

Catalog number

Short handle

Black plastic bezel

Maintained B & C  
Maintained A & C  
Spring return from C to B

G1M2SS1-10Δ  
G1M2SS2-10Δ  
G1M2SS3-10Δ

Chrome bezel

Maintained B & C  
Maintained A & C  
Spring return from C to B

G2M2SS1-30Δ  
G2M2SS2-30Δ  
G2M2SS3-30Δ

Long handle

Black plastic bezel

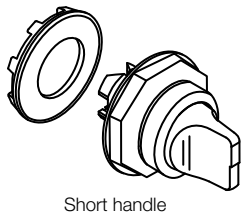
Maintained B & C  
Maintained A & C  
Spring return from C to B

G1M2SS4-10Δ  
G1M2SS5-10Δ  
G1M2SS6-10Δ

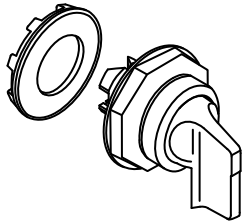
Chrome bezel

Maintained B & C  
Maintained A & C  
Spring return from C to B

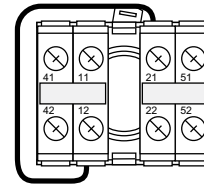
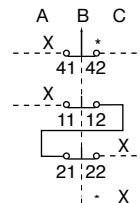
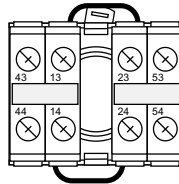
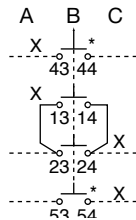
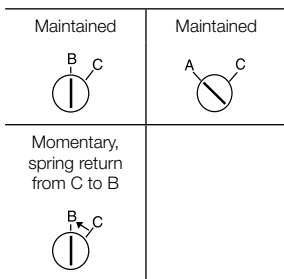
G2M2SS4-30Δ  
G2M2SS5-30Δ  
G2M2SS6-30Δ



Short handle



Long handle



### Contact functions

Block positions as seen from operator front.

| Handle position | Left block | Right block |
|-----------------|------------|-------------|
| A (B)           | O          | O           |
| C               | x          | x           |

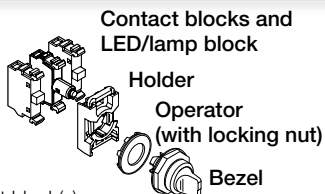
O = not actuated (normal state)  
x = actuated (state changed)

## Two position selector switches Illuminated

### How to order:

**Alt.1** • Operator  
+ Holder  
+ Contact block(s)  
+ LED/lamp block

**Alt.2** • Operator  
+ Holder with Contact block(s)  
and LED/lamp block



| Δ Illuminated handle color |         |
|----------------------------|---------|
| R Red                      | L Blue  |
| G Green                    | C Clear |
| Y Yellow                   |         |

To select handle color, substitute the Δ in the catalog number with the above color letter code.  
EX: G1M2SS1-11R (for a red handle).

For contact blocks, holders & LED lamp blocks, see Accessories pages 7.54 - 7.58.

### Illuminated<sup>①</sup>

#### Description

#### Catalog number

Short handle

#### Black plastic bezel

Maintained B & C  
Maintained A & C  
Spring return from C to B

G1M2SS1-11Δ  
G1M2SS2-11Δ  
G1M2SS3-11Δ

#### Chrome bezel

Maintained B & C  
Maintained A & C  
Spring return from C to B

G2M2SS1-31Δ  
G2M2SS2-31Δ  
G2M2SS3-31Δ

Long handle

#### Black plastic bezel

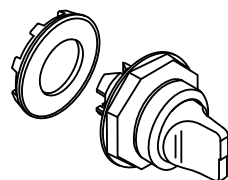
Maintained B & C  
Maintained A & C  
Spring return from C to B

G1M2SS4-11Δ  
G1M2SS5-11Δ  
G1M2SS6-11Δ

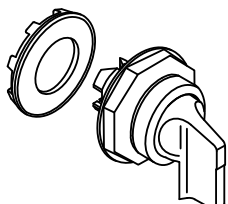
#### Chrome bezel

Maintained B & C  
Maintained A & C  
Spring return from C to B

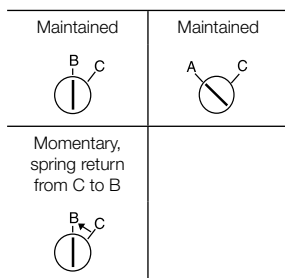
G2M2SS4-31Δ  
G2M2SS5-31Δ  
G2M2SS6-31Δ



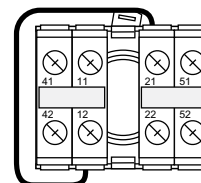
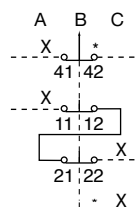
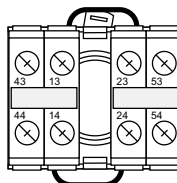
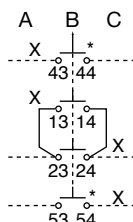
Short handle



Long handle



### Center position connection detail



① No contact block in the center position

② Lamp block MLB-1. Bulb not included. Other lamp block see Accessories, bulb max 1.2 W.

## Three position selector switches Non-illuminated

**How to order:**

**Alt.1** • Operator  
+ Holder  
+ Contact block(s)

**Alt.2** • Operator  
+ Holder with contact block(s)

**Contact blocks**

**Holder**  
**Operator (with locking nut)**  
**Bezel**

**Δ Non-illuminated handle color**

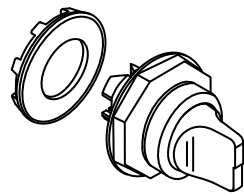
|                |
|----------------|
| <b>R</b> Red   |
| <b>B</b> Black |
| <b>U</b> Grey  |

To select handle color, substitute the Δ in the catalog number with the above color letter code.  
EX: G1M3SS1-10R (for a red handle).

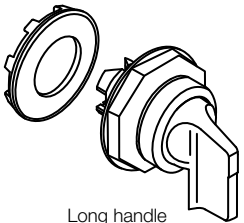
NOTE: No contact block in center position.  
For contact blocks & holders, see Accessories pages 7.54.

### Non-illuminated

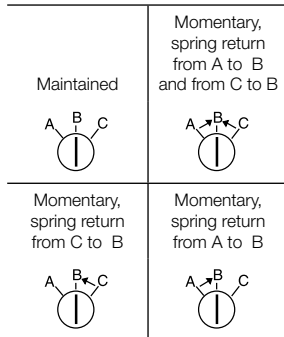
| Description                | Catalog number |
|----------------------------|----------------|
| Short handle               |                |
| <b>Black plastic bezel</b> |                |
| Maintained A, B & C        | G1M3SS1-10Δ    |
| Spring return A & C to B   | G1M3SS2-10Δ    |
| Maint A, Spring ret C to B | G1M3SS3-10Δ    |
| Maint C, Spring ret A to B | G1M3SS7-10Δ    |
| <b>Chrome bezel</b>        |                |
| Maintained A, B & C        | G2M3SS1-30Δ    |
| Spring return A & C to B   | G2M3SS2-30Δ    |
| Maint A, Spring ret C to B | G2M3SS3-30Δ    |
| Maint C, Spring ret A to B | G2M3SS7-30Δ    |
| Long handle                |                |
| <b>Black plastic bezel</b> |                |
| Maintained A, B & C        | G1M3SS4-10Δ    |
| Spring return A & C to B   | G1M3SS5-10Δ    |
| Maint A, Spring ret C to B | G1M3SS6-10Δ    |
| Maint C, Spring ret A to B | G1M3SS8-10Δ    |
| <b>Chrome bezel</b>        |                |
| Maintained A, B & C        | G2M3SS4-30Δ    |
| Spring return A & C to B   | G2M3SS5-30Δ    |
| Maint A, Spring ret C to B | G2M3SS6-30Δ    |
| Maint C, Spring ret A to B | G2M3SS8-30Δ    |



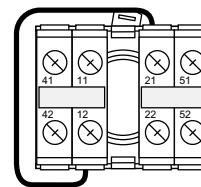
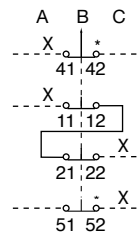
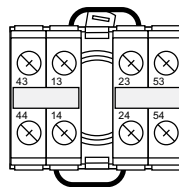
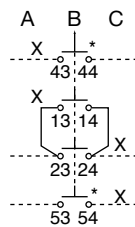
Short handle



Long handle



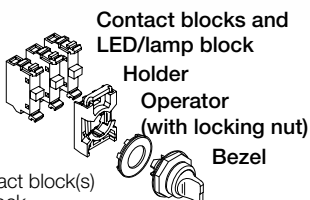
### Center position connection detail



## Three position selector switches Illuminated

### How to order:

- Alt.1** • Operator  
+ Holder  
+ Contact block(s)  
+ LED/lamp block



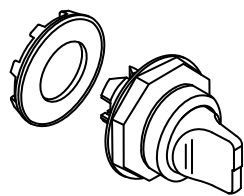
- Alt.2** • Operator  
+ Holder with Contact block(s)  
and LED/lamp block

#### Δ Illuminated handle color

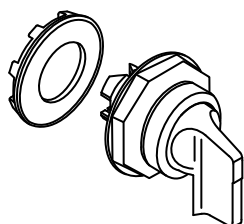
|          |         |
|----------|---------|
| R Red    | L Blue  |
| G Green  | C Clear |
| Y Yellow |         |

To select handle color, substitute the Δ in the catalog number with the above color letter code.  
EX: G1M3SS1-11R (for a red handle).

NOTE: For contact blocks, holders & LED lamp blocks, see Accessories pages 7.54 - 7.58.



Short handle



Long handle

### Illuminated<sup>①</sup>

| Description                | Catalog number |
|----------------------------|----------------|
| Short handle               |                |
| Black plastic bezel        |                |
| Maintained A, B & C        | G1M3SS1-11Δ    |
| Spring return A & C to B   | G1M3SS2-11Δ    |
| Maint A, Spring ret C to B | G1M3SS3-11Δ    |
| Maint C, Spring ret A to B | G1M3SS7-11Δ    |
| Chrome bezel               |                |
| Maintained A, B & C        | G2M3SS1-31Δ    |
| Spring return A & C to B   | G2M3SS2-31Δ    |
| Maint A, Spring ret C to B | G2M3SS3-31Δ    |
| Maint C, Spring ret A to B | G2M3SS7-31Δ    |
| Long handle                |                |
| Black plastic bezel        |                |
| Maintained A, B & C        | G1M3SS4-11Δ    |
| Spring return A & C to B   | G1M3SS5-11Δ    |
| Maint A, Spring ret C to B | G1M3SS6-11Δ    |
| Maint C, Spring ret A to B | G1M3SS8-11Δ    |
| Chrome bezel               |                |
| Maintained A, B & C        | G2M3SS4-31Δ    |
| Spring return A & C to B   | G2M3SS5-31Δ    |
| Maint A, Spring ret C to B | G2M3SS6-31Δ    |
| Maint C, Spring ret A to B | G2M3SS8-31Δ    |

### Center position connection detail

Maintained



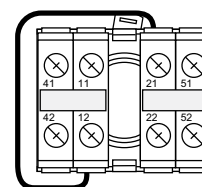
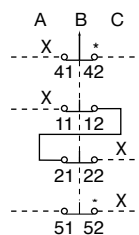
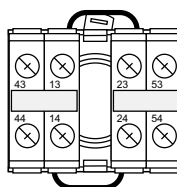
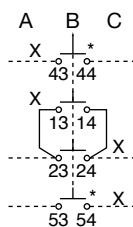
Momentary, spring return from C to B



Momentary, spring return from A to B and from C to B



Momentary, spring return from A to B



<sup>①</sup> No contact block in the center position

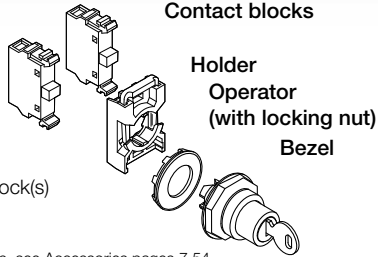
## Key-operated selector switches ①

### Two and three position

#### How to order:

**Alt.1** • Operator  
+ Holder  
+ Contact block(s)  
+ LED/lamp block

**Alt.2** • Operator  
+ Holder with Contact block(s)  
and LED/lamp block



#### Δ Key codes

**1** Ronis 71

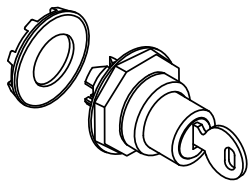
**2** Ronis 72

**3** Ronis 73

To select desired key code, substitute the Δ in the catalog number with the above key letter code.  
EX: G1M2SSK1-10Δ (Ronis 72 key)

NOTE: For contact blocks & holders, see Accessories pages 7.54.

7



| Two position                             | Three position                                           |
|------------------------------------------|----------------------------------------------------------|
| Maintained<br>                           | Maintained<br>                                           |
| Maintained<br>                           | Maintained<br>                                           |
| Momentary, spring return from C to B<br> | Momentary, spring return from A to B and from C to B<br> |
|                                          | Momentary, spring return from C to B<br>                 |
|                                          | Momentary, spring return from C to B<br>                 |

| Description                | The key can be removed in... | Catalog number |
|----------------------------|------------------------------|----------------|
| <b>2-position</b>          |                              |                |
| <b>Black plastic bezel</b> |                              |                |
| Maintained B & C           | B & C                        | G1M2SSK1-10Δ   |
| Maintained B & C           | B only                       | G1M2SSK2-10Δ   |
| Spring return C to B       | B only                       | G1M2SSK3-10Δ   |
| <b>Chrome bezel</b>        |                              |                |
| Maintained B & C           | B & C                        | G2M2SSK1-30Δ   |
| Maintained B & C           | B only                       | G2M2SSK2-30Δ   |
| Spring return C to B       | B only                       | G2M2SSK3-30Δ   |
| <b>3-position</b>          |                              |                |
| <b>Black plastic bezel</b> |                              |                |
| Maintained A, B, & C       | A, B & C                     | G1M3SSK1-10Δ   |
| Maintained A, B, & C       | B only                       | G1M3SSK2-10Δ   |
| Spring return A & C to B   | B only                       | G1M3SSK3-10Δ   |
| Spring return C to B       | A only                       | G1M3SSK4-10Δ   |
| Spring return C to B       | A, B, & C                    | G1M3SSK5-10Δ   |
| <b>Chrome bezel</b>        |                              |                |
| Maintained A, B, & C       | A, B & C                     | G2M3SSK1-30Δ   |
| Maintained A, B, & C       | B only                       | G2M3SSK2-30Δ   |
| Spring return A & C to B   | B only                       | G2M3SSK3-30Δ   |
| Spring return C to B       | A only                       | G2M3SSK4-30Δ   |
| Spring return C to B       | A, B, & C                    | G2M3SSK5-30Δ   |

① Includes two keys

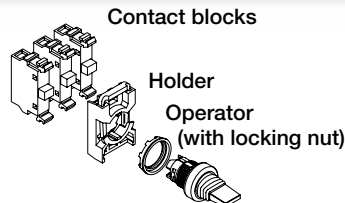


## Toggle switches

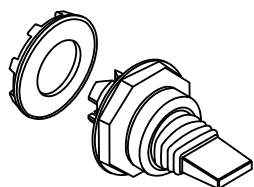
### Two and three position

#### How to order:

- Alt.1** • Operator  
+ Holder  
+ Contact block(s)
- Alt.2** • Operator  
+ Holder with Contact block(s)



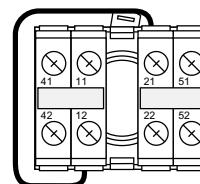
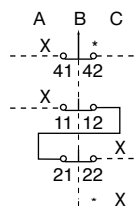
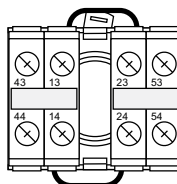
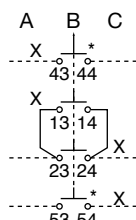
NOTE: For contact blocks & holders, see Accessories pages 7.54.



| Description                                   | Catalog number |
|-----------------------------------------------|----------------|
| <b>2-position</b>                             |                |
| Maintained, black bezel                       | G1MTS1-10B     |
| Maintained, chrome bezel                      | G2MTS1-30B     |
| <b>3-position</b>                             |                |
| Maintained, black bezel                       | G1MTS3-10B     |
| Maintained, chrome bezel                      | G2MTS3-30B     |
| Spring return from A and C to B, black bezel  | G1MTS2-10B     |
| Spring return from A and C to B, chrome bezel | G2MTS2-30B     |

| Two position | Three position                                       |
|--------------|------------------------------------------------------|
| Maintained   | Momentary, spring return from A to B and from C to B |
|              |                                                      |
|              | Maintained                                           |
|              |                                                      |

#### Center position connection detail

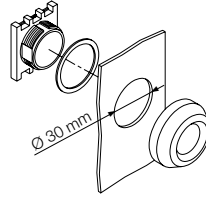


## Extreme duty pushbuttons for 30mm mounting hole

### How to order

- Operator
- + Contact block(s)

### Mounting



NOTE: For contact blocks, see Accessories pages 7.54.

### Operator: Extreme duty pushbutton

The Extreme duty pushbutton, for 30 mm hole, is a robust and compact pushbutton for use in cold, hot, damp, oily and other tough environments. Suitable especially for hydraulic lifts, compact pendant controllers and pushbutton stations.

| Description | Included contact blocks | Catalog number | Weight oz. |
|-------------|-------------------------|----------------|------------|
| Red         | -                       | KP6-40R        | 0.78       |
| Green       | -                       | KP6-40G        | 0.78       |
| black       | -                       | KP6-40B        | 0.78       |
| black       | 1 NO + 1 NC             | KP6-40B-11     | 1.7        |
| black       | 1 NO                    | KP6-40B-10     | 1.2        |
| black       | 1 NC                    | KP6-40B-01     | 1.2        |
| black       | 2 NO                    | KP6-40B-20     | 1.7        |
| black       | 2 NC                    | KP6-40B-02     | 1.7        |

### Contact blocks

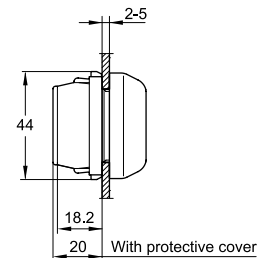
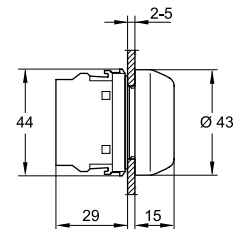
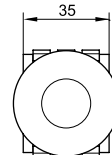
|      |        |      |
|------|--------|------|
| 1 NO | MCB-10 | 0.46 |
| 1 NC | MCB-01 | 0.46 |

### Accessories

|                                                |            |  |
|------------------------------------------------|------------|--|
| Guide washer for positioning and anti-rotation | 2154 373-1 |  |
|------------------------------------------------|------------|--|

### Technical data

|                      |                                           |
|----------------------|-------------------------------------------|
| Degree of protection | IP66<br>UL Catalog number 1, 3R,<br>4, 4X |
| Ambient temperature  | -30° — +70°                               |



Red



Green



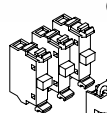
Black

## Pilot lights

### How to order:

**Alt.1** • Operator  
+ Holder  
+ Contact block(s)

**Alt.2** • Operator  
+ Holder with Contact block(s)



Contact blocks

Holder

Operator  
(with locking nut)



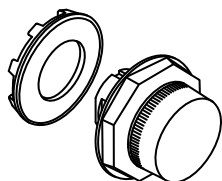
Δ Lens color

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

To select lens color, substitute the Δ in the catalog number with the above color letter code.

EX: G1ML1-100R (for a red lens).

NOTE: For contact blocks, see Accessories pages 7.54.



### Description

Black plastic mounting ring  
Chrome mounting ring

### Catalog number

G1ML1-100Δ  
G2ML1-100Δ

7

### Lamp blocks with holder<sup>①</sup>

#### Supply voltage

#### Catalog number

For max. 2 W, 230 V AC and DC  
filament bulb or LED

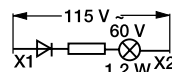
MCBH-001



115 V AC supply voltage.

For 60 V filament bulb  
max. 1.2 W

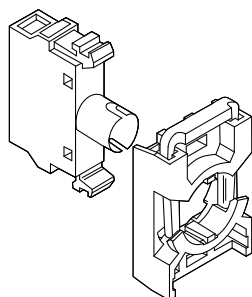
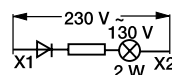
MCBH-002



230 V AC supply voltage.

For 130 V filament bulb  
max. 2 W

MCBH-003



Lamp block + holder



Diffusing lens

### Light diffusing lens

To improve illumination. *Note: Cannot be used with text cap.*

#### Description

#### Catalog number

The lens is used instead of text cap

KA1-8005

<sup>①</sup> Bulb not included. See page 7.48

## Accessories

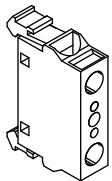
### Transformer and lamp blocks



Transformer block for pilot lights



Transformer block for illuminated operators



Diode block



Lamp block

| Description                                                                                                          | Bulb suffix           |          | Catalog number | Weight oz. |           |     |
|----------------------------------------------------------------------------------------------------------------------|-----------------------|----------|----------------|------------|-----------|-----|
|                                                                                                                      | LED                   | Filament |                |            |           |     |
| Transformer blocks for pilot lights                                                                                  |                       |          |                |            |           |     |
| For 6 or 24 V Filament bulb and 24 V LED. Max 1.2 W Filament bulb lamp block included in the transformer, BA 9s base |                       |          |                |            |           |     |
| Primary voltage                                                                                                      | Secondary voltage     |          |                |            |           |     |
| 110-127 V AC                                                                                                         | 6 V AC                | –        | T2             | KTR1-1001  | 3.4       |     |
| 220-250 V AC                                                                                                         | 6 V AC                | –        | T2             | KTR1-1002  | 3.4       |     |
| 380-420 V AC                                                                                                         | 6 V AC                | –        | T3             | KTR1-1003  | 3.4       |     |
| 440-480 V AC                                                                                                         | 6 V AC                | –        | T4             | KTR1-1004  | 3.4       |     |
| 500-600 V AC                                                                                                         | 6 V AC                | –        | T5             | KTR1-1005  | 3.4       |     |
| 110-127 V AC                                                                                                         | 24 V AC <sup>1)</sup> |          | T1             | T6         | KTR1-1011 | 3.4 |
| 220-250 V AC                                                                                                         | 24 V AC <sup>1)</sup> |          | T2             | T7         | KTR1-1012 | 3.4 |
| 380-420 V AC                                                                                                         | 24 V AC <sup>1)</sup> |          | T3             | T8         | KTR1-1013 | 3.4 |
| 440-480 V AC                                                                                                         | 24 V AC <sup>1)</sup> |          | T4             | T9         | KTR1-1014 | 3.4 |

#### Transformer blocks for illuminated operators - Intended to supply 1.2W filament bulb mounted in lamp block MLB-J only

|              |                       |    |    |           |     |
|--------------|-----------------------|----|----|-----------|-----|
| 110-127 V AC | 6 V AC                | —  | T2 | KTR1-2001 | 3.4 |
| 220-250 V AC | 6 V AC                | —  | T2 | KTR1-2002 | 3.4 |
| 380-420 V AC | 6 V AC                | —  | T3 | KTR1-2003 | 3.4 |
| 440-480 V AC | 6 V AC                | —  | T4 | KTR1-2004 | 3.4 |
| 500-600 V AC | 6 V AC                | —  | T5 | KTR1-2005 | 3.4 |
| 110-127 V AC | 24 V AC <sup>1)</sup> | T1 | T6 | KTR1-2011 | 3.4 |
| 220-250 V AC | 24 V AC <sup>1)</sup> | T2 | T7 | KTR1-2012 | 3.4 |
| 380-420 V AC | 24 V AC <sup>1)</sup> | T3 | T8 | KTR1-2013 | 3.4 |
| 440-480 V AC | 24 V AC <sup>1)</sup> | T4 | T9 | KTR1-2014 | 3.4 |

<sup>1)</sup> Can be used with LED bulb

#### Diode block

|             |          |      |
|-------------|----------|------|
| Diode block | MDB-1001 | 0.53 |
|-------------|----------|------|

Note: To be used if several lamps are to be connected to a common lamp-test pushbutton. A diode must be connected in series with each lamp. The Diode block snaps onto the lamp block or is placed at the side

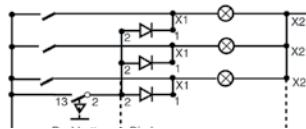


Diagram for lamp test with three Diode blocks (not intended for integrated LED bulbs)

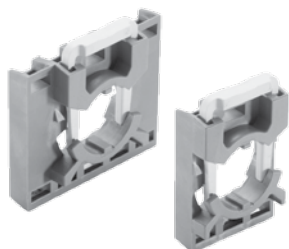
#### Single lamp blocks for front mounting, BA 9s base

| Description                           | Catalog number | Weight oz. |
|---------------------------------------|----------------|------------|
| <p>230 V, 2 W<br/>X1 X2</p>           | MLB-1          | 0.53       |
| <p>115 V<br/>X1 60 V X2<br/>1.2 W</p> | MLB-2          | 0.60       |
| <p>230 V<br/>X1 130 V X2<br/>2 W</p>  | MLB-3          | 0.71       |
| <p>115 V<br/>X1 24 V X2<br/>LED</p>   | MLB-4          | 0.60       |
| <p>LED<br/>X1 X2<br/>24-230 V</p>     | MLB-8          | 0.53       |

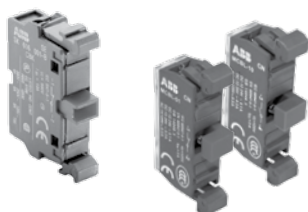
NOTE: Package order quantities will apply.

## Accessories

### Contact blocks and holders



Holders for contact block

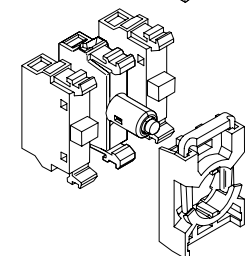
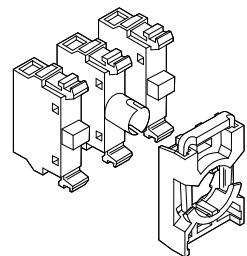
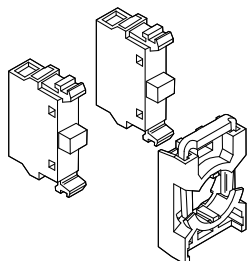


Contact block

Micro switch blocks



Double contact blocks



| Description              | Catalog number | Weight oz. |
|--------------------------|----------------|------------|
| <b>Holders</b>           |                |            |
| Holders for three blocks | MCBH-00        | 0.21       |
| Holders for five blocks* | MCBH5-00       | 0.28       |

\* Note: Double contact blocks are required on side positions

#### Single contact blocks for front mounting

|                             |         |      |
|-----------------------------|---------|------|
| 1 NO                        | MCB-10  | 0.46 |
| 1 NC                        | MCB-01  | 0.46 |
| 1 NO w/gold plated contacts | MCB-10G | 0.46 |
| 1 NC w/gold plated contacts | MCB-01G | 0.46 |

#### Micro switch blocks

|      |         |      |
|------|---------|------|
| 1 NO | MCBL-10 | 0.35 |
| 1 NC | MCBL-01 | 0.35 |

#### Double contact block for front mounting

|                            |         |      |
|----------------------------|---------|------|
| 2 NO                       | MCB-20  | 0.92 |
| 2 NC                       | MCB-02  | 0.92 |
| 1 NO + 1 NC                | MCB-11  | 0.92 |
| 2NC w/gold plated contacts | MCB-02G | 0.92 |
| 2NO w/gold plated contacts | MCB-20G | 0.92 |

Note: To be used together with MCBH5-00 when Contact blocks in position 4- and 5- are needed. Also when using 2nd lamp blocks MCBH-00 together with Selector Switch and Contact block in position 3- is needed

#### Contact blocks with holder for front mounting ①

##### For non-illuminated operators

|             |         |
|-------------|---------|
| 1 NC        | MCBH-01 |
| 1 NO        | MCBH-10 |
| 2 NC        | MCBH-02 |
| 2 NO        | MCBH-20 |
| 3 NC        | MCBH-03 |
| 3 NO        | MCBH-30 |
| 1 NO + 1 NC | MCBH-11 |
| 1 NO + 2 NC | MCBH-12 |
| 2 NO + 1 NC | MCBH-21 |

##### For illuminated operator

|                    |          |
|--------------------|----------|
| 1 LB               | MCBH-001 |
| 1 NC + 1 LB        | MCBH-011 |
| 1 NO + 1 LB        | MCBH-101 |
| 1 NO + 1 NC + 1 LB | MCBH-111 |
| 2 NO & 1 LB        | MCBH-021 |
| 2 NO & 1 LB        | MCBH-201 |

① Max. # of blocks in holder is 3.

## Accessories LED bulbs



LED bulbs

7

| Description                                                                                                                                     | Wavelength<br>nm | Luminance<br>mcd | Catalog<br>number | Weight<br>oz. |
|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------|-------------------|---------------|
| <b>LED bulbs</b>                                                                                                                                |                  |                  |                   |               |
| 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 (+). |                  |                  |                   |               |
| <b>Rated voltage 12 V, DC, rated current 15 mA, service life &gt;50 000 h</b>                                                                   |                  |                  |                   |               |
| Red                                                                                                                                             | 630              | 250              | KA2-2011          | 0.18          |
| Green                                                                                                                                           | 525              | 1000             | KA2-2012          | 0.18          |
| Yellow                                                                                                                                          | 592              | 250              | KA2-2013          | 0.18          |
| Blue                                                                                                                                            | 470              | 450              | KA2-2014          | 0.18          |
| White <sup>1)</sup>                                                                                                                             |                  | 600              | KA2-2015          | 0.18          |
| <b>Rated voltage 24 V, (AC)/DC, rated current 15 mA, service life &gt;50 000 h</b>                                                              |                  |                  |                   |               |
| Red                                                                                                                                             | 630              | 250              | KA2-2021          | 0.18          |
| Green                                                                                                                                           | 525              | 800              | KA2-2022          | 0.18          |
| Yellow                                                                                                                                          | 592              | 250              | KA2-2023          | 0.18          |
| Blue                                                                                                                                            | 470              | 400              | KA2-2024          | 0.18          |
| White <sup>1)</sup>                                                                                                                             |                  | 500              | KA2-2025          | 0.18          |
| <b>Rated voltage 36 V, (AC)/DC, rated current 12 mA, service life &gt;50 000 h</b>                                                              |                  |                  |                   |               |
| Red                                                                                                                                             | 630              | 200              | KA2-2031          | 0.18          |
| Green                                                                                                                                           | 525              | 2000             | KA2-2032          | 0.18          |
| Yellow                                                                                                                                          | 592              | 200              | KA2-2033          | 0.18          |
| Blue                                                                                                                                            | 470              | 750              | KA2-2034          | 0.18          |
| White <sup>1)</sup>                                                                                                                             |                  | 1400             | KA2-2035          | 0.18          |
| <b>Rated voltage 48 V, (AC)/DC, rated current 12 mA, service life &gt;50 000 h</b>                                                              |                  |                  |                   |               |
| Red                                                                                                                                             | 630              | 200              | KA2-2041          | 0.18          |
| Green                                                                                                                                           | 525              | 1700             | KA2-2042          | 0.18          |
| Yellow                                                                                                                                          | 592              | 240              | KA2-2043          | 0.18          |
| Blue                                                                                                                                            | 470              | 720              | KA2-2044          | 0.18          |
| White <sup>1)</sup>                                                                                                                             |                  | 1200             | KA2-2045          | 0.18          |
| <b>Rated voltage 60 V, (AC)/DC, rated current 10 mA, service life &gt;50 000 h</b>                                                              |                  |                  |                   |               |
| Red                                                                                                                                             | 630              | 160              | KA2-2051          | 0.18          |
| Green                                                                                                                                           | 525              | 1400             | KA2-2052          | 0.18          |
| Yellow                                                                                                                                          | 592              | 200              | KA2-2053          | 0.18          |
| Blue                                                                                                                                            | 470              | 600              | KA2-2054          | 0.18          |
| White <sup>1)</sup>                                                                                                                             |                  | 1000             | KA2-2055          | 0.18          |
| <b>Rated voltage 110-130 V, AC, rated current 4-6 mA, service life 25 000 h</b>                                                                 |                  |                  |                   |               |
| Red                                                                                                                                             | 630              | 60-100           | KA2-2131          | 0.18          |
| Green                                                                                                                                           | 525              | 500-850          | KA2-2132          | 0.18          |
| Yellow                                                                                                                                          | 592              | 70-120           | KA2-2133          | 0.18          |
| Blue                                                                                                                                            | 470              | 220-350          | KA2-2134          | 0.18          |
| White <sup>1)</sup>                                                                                                                             |                  | 350-600          | KA2-2135          | 0.18          |
| <b>Rated voltage 110-130 V, AC/DC, rated current 4-6 mA, service life 25 000 h</b>                                                              |                  |                  |                   |               |
| Red                                                                                                                                             | 630              | 60               | KA2-2141          | 0.18          |
| Green                                                                                                                                           | 525              | 500              | KA2-2142          | 0.18          |
| Yellow                                                                                                                                          | 592              | 70               | KA2-2143          | 0.18          |
| Blue                                                                                                                                            | 470              | 220              | KA2-2144          | 0.18          |
| White <sup>1)</sup>                                                                                                                             |                  | 350              | KA2-2145          | 0.18          |
| <b>Rated voltage 230 V, AC, rated current 4 mA, service life 25 000 h</b>                                                                       |                  |                  |                   |               |
| Red                                                                                                                                             | 630              | 60               | KA2-2221          | 0.18          |
| Green                                                                                                                                           | 525              | 500              | KA2-2222          | 0.18          |
| Yellow                                                                                                                                          | 592              | 70               | KA2-2223          | 0.18          |
| Blue                                                                                                                                            | 470              | 220              | KA2-2224          | 0.18          |
| White <sup>1)</sup>                                                                                                                             |                  | 350              | KA2-2225          | 0.18          |

**Note:** Care should be taken for DC supply where + and - must be correctly connected. This is marked X1 (+) and X2 (-) on the product.

Choose the same color on the LED as on the lamp cap.

<sup>1)</sup> X=0.31, Y=0.32 according to the ICI Chromaticity Diagram.

## Accessories

### LED and filament bulbs



LED bulbs

| Description                                                           | Wavelength<br>nm | Luminance<br>mcd | Catalog<br>number | Weight<br>oz. |
|-----------------------------------------------------------------------|------------------|------------------|-------------------|---------------|
| <b>LED bulbs continued</b>                                            |                  |                  |                   |               |
| Rated voltage 230 V, AC/DC, rated current 4 mA, service life 25 000 h |                  |                  |                   |               |
| Red                                                                   | 630              | 60               | KA2-2231          | 0.18          |
| Green                                                                 | 525              | 500              | KA2-2232          | 0.18          |
| Yellow                                                                | 592              | 70               | KA2-2233          | 0.18          |
| Blue                                                                  | 470              | 220              | KA2-2234          | 0.18          |
| White                                                                 | <sup>1)</sup>    | 350              | KA2-2235          | 0.18          |

**Note:** Care should be taken for DC supply where + and - must be correctly connected. This is marked X1 (+) and X2 (-) on the product.

Choose the same color on the LED as on the lamp cap.

<sup>1)</sup> X=0.31, Y=0.32 according to the ICI Chromaticity Diagram.

#### Flashing LED bulbs

Rated voltage 24 V, DC rated current 25 mA

| Description | Wavelength<br>nm | Service life<br>hours | Catalog number | Weight<br>oz. |
|-------------|------------------|-----------------------|----------------|---------------|
| Red         | 630              | 50 000                | 4950 512-1     | 0.18          |
| Green       | 565              | 50 000                | 4950 512-2     | 0.18          |
| Yellow      | 585              | 50 000                | 4950 512-3     | 0.18          |

**Note:** Care should be taken for DC supply where + and - must be correctly connected. This is marked X1 (+) and X2 (-) on the product.

Choose the same color on the LED as on the lamp cap.



Filament bulbs

#### Filament bulbs BA 9s base

| Rated voltage<br>V m AC/DC | Rated<br>current<br>A | Rated<br>output<br>W | Service life<br>h | Luminance<br>mcd | Catalog number | Weight<br>oz. |
|----------------------------|-----------------------|----------------------|-------------------|------------------|----------------|---------------|
| 6                          | 200                   | 1.2                  | 10 000            | 350              | 5911 086-11    | 0.071         |
| 12                         | 100                   | 1.2                  | 10 000            | 203              | 5911 086-12    | 0.071         |
| 24                         | 50                    | 1.2                  | 10 000            | 280              | 5911 086-13    | 0.071         |
| 30                         | 40                    | 1.2                  | 10 000            | 250              | 5911 086-4     | 0.071         |
| 48                         | 42                    | 2                    | 6 000             | 500              | 5911 086-5     | 0.071         |
| 60                         | 20                    | 1.2                  | 5 000             | 190              | 5911 086-14    | 0.071         |
| 110                        | 18                    | 2                    | 7 500             | 250              | 5911 086-7     | 0.071         |
| 130                        | 15                    | 2                    | 7 500             | 120              | 5911 086-15    | 0.071         |

A lamp Changing Tool is required for changing bulb.

#### Lamp changing tool

For LED bulbs and for bulbs

KA1-8072 0.071

A lamp changing tool is required for changing bulb.



Lamp changing tool



LED block with built in  
leakage current protection

## Accessories

### LED blocks, front mounting

| Description | Rated<br>Current mA | Wavelength<br>nm | Luminance<br>mcd | Catalog number | Weight<br>oz. |
|-------------|---------------------|------------------|------------------|----------------|---------------|
|-------------|---------------------|------------------|------------------|----------------|---------------|

#### LED-blocks

Lamp block with one diode chip integrated into lamp block. Choose the same color for the LED and the lamp cap or else use a clear cap.

##### Rated voltage 12 V, DC

|        |      |               |      |          |      |
|--------|------|---------------|------|----------|------|
| Red    | 12.0 | 620           | 320  | MLBL-00R | 0.42 |
| Green  | 9.3  | 520           | 1500 | MLBL-00G | 0.42 |
| Yellow | 12.0 | 588           | 380  | MLBL-00Y | 0.42 |
| Blue   | 9.5  | 468           | 450  | MLBL-00L | 0.42 |
| White  | 9.3  | <sup>2)</sup> | 600  | MLBL-00W | 0.42 |

##### Rated voltage 24 V, AC/DC

|        |     |               |      |          |      |
|--------|-----|---------------|------|----------|------|
| Red    | 9.9 | 620           | 250  | MLBL-01R | 0.42 |
| Green  | 9.2 | 520           | 1500 | MLBL-01G | 0.42 |
| Yellow | 9.9 | 588           | 250  | MLBL-01Y | 0.42 |
| Blue   | 9.3 | 468           | 450  | MLBL-01L | 0.42 |
| White  | 9.2 | <sup>2)</sup> | 600  | MLBL-01W | 0.42 |

##### Rated voltage 48 V, AC/DC

|        |      |               |      |          |      |
|--------|------|---------------|------|----------|------|
| Red    | 10.0 | 620           | 260  | MLBL-02R | 0.42 |
| Green  | 9.7  | 520           | 1500 | MLBL-02G | 0.42 |
| Yellow | 10.0 | 588           | 300  | MLBL-02Y | 0.42 |
| Blue   | 9.7  | 468           | 450  | MLBL-02L | 0.42 |
| White  | 9.7  | <sup>1)</sup> | 600  | MLBL-02W | 0.42 |

##### Rated voltage 60 V, AC/DC

|        |      |               |      |          |      |
|--------|------|---------------|------|----------|------|
| Red    | 13.0 | 620           | 350  | MLBL-03R | 0.42 |
| Green  | 12.7 | 520           | 2000 | MLBL-03G | 0.42 |
| Yellow | 13.0 | 588           | 400  | MLBL-03Y | 0.42 |
| Blue   | 12.7 | 468           | 550  | MLBL-03L | 0.42 |
| White  | 12.7 | <sup>1)</sup> | 750  | MLBL-03W | 0.42 |

##### Rated voltage 110-130 V, AC

|        |     |               |      |          |      |
|--------|-----|---------------|------|----------|------|
| Red    | 8.6 | 620           | 200  | MLBL-04R | 0.42 |
| Green  | 8.5 | 520           | 1200 | MLBL-04G | 0.42 |
| Yellow | 8.6 | 588           | 250  | MLBL-04Y | 0.42 |
| Blue   | 7.0 | 468           | 400  | MLBL-04L | 0.42 |
| White  | 7.0 | <sup>1)</sup> | 500  | MLBL-04W | 0.42 |

##### Rated voltage 110-130 V, DC

|        |     |               |      |          |      |
|--------|-----|---------------|------|----------|------|
| Red    | 9.9 | 620           | 250  | MLBL-05R | 0.42 |
| Green  | 9.8 | 520           | 1500 | MLBL-05G | 0.42 |
| Yellow | 9.9 | 588           | 300  | MLBL-05Y | 0.42 |
| Blue   | 9.8 | 468           | 450  | MLBL-05L | 0.42 |
| White  | 9.8 | <sup>1)</sup> | 600  | MLBL-05W | 0.42 |

##### Rated voltage 220 V, DC

|        |     |               |     |          |      |
|--------|-----|---------------|-----|----------|------|
| Red    | 8.0 | 620           | 180 | MLBL-06R | 0.42 |
| Green  | 8.0 | 520           | 110 | MLBL-06G | 0.42 |
| Yellow | 8.0 | 588           | 200 | MLBL-06Y | 0.42 |
| Blue   | 8.0 | 468           | 450 | MLBL-06L | 0.42 |
| White  | 8.0 | <sup>1)</sup> | 600 | MLBL-06W | 0.42 |

##### Rated voltage 230 V, AC

|        |     |               |      |          |      |
|--------|-----|---------------|------|----------|------|
| Red    | 9.5 | 620           | 250  | MLBL-07R | 0.42 |
| Green  | 9.4 | 520           | 1500 | MLBL-07G | 0.42 |
| Yellow | 9.5 | 588           | 300  | MLBL-07Y | 0.42 |
| Blue   | 8.2 | 468           | 450  | MLBL-07L | 0.42 |
| White  | 8.2 | <sup>1)</sup> | 600  | MLBL-07W | 0.42 |

Note: Care should be taken for DC supply where + and - must be correctly connected. This is marked X1 (+) and X2 (-) on the product.

<sup>1)</sup> X=0.31, Y=0.32 according to the ICI Chromaticity Diagram.



## Accessories

### LED blocks, front mounting



LED block with built in  
leakage current protection

| Description | Rated<br>Current mA | Wavelength<br>nm | Luminance<br>mcd | Catalog<br>number | Weight<br>oz. |
|-------------|---------------------|------------------|------------------|-------------------|---------------|
|-------------|---------------------|------------------|------------------|-------------------|---------------|

#### LED blocks, cont.

Lamp block with one diode chip integrated into lamp block. Choose the same color for the LED and the lamp cap or else use a clear cap.

#### Rated voltage 380 V, AC

|        |      |               |      |          |      |
|--------|------|---------------|------|----------|------|
| Red    | 10.2 | 620           | 250  | MLBL-08R | 0.42 |
| Green  | 10.2 | 520           | 1500 | MLBL-08G | 0.42 |
| Yellow | 10.2 | 582           | 300  | MLBL-08Y | 0.42 |
| Blue   | 9.1  | 468           | 450  | MLBL-08L | 0.42 |
| White  | 9,1  | <sup>1)</sup> | 600  | MLBL-08W | 0.42 |

#### Rated voltage 415 V, AC

|        |      |               |      |          |      |
|--------|------|---------------|------|----------|------|
| Red    | 11.2 | 620           | 280  | MLBL-09R | 0.42 |
| Green  | 11.2 | 520           | 1800 | MLBL-09G | 0.42 |
| Yellow | 11.2 | 588           | 350  | MLBL-09Y | 0.42 |
| Blue   | 9.9  | 468           | 500  | MLBL-09L | 0.42 |
| White  | 9.9  | <sup>1)</sup> | 650  | MLBL-09W | 0.42 |

Note: Care should be taken for DC supply where + and - must be correctly connected. This is marked X1 (+) and X2 (-) on the product.

<sup>1)</sup> X=0.31, Y=0.32 according to the ICI Chromaticity Diagram.

Rear mounted LED blocks can be found on page 7.62.

## Accessories



DIN-rail adaptor



Dummy block



30mm adaptors



Adaptor



30mm gasket



Lamp changing tool



Mounting tool



Mounting tool for power tool



Blanking plugs



Square bezels

| Description                                 | Catalog number | Weight oz. |
|---------------------------------------------|----------------|------------|
| <b>DIN-rail Adaptor</b>                     |                |            |
| DIN-rail adaptor                            | MA1-8131       | 0.71       |
| DIN-rail (adaptor) kit with one dummy block | MA1-8001       | 0.99       |

NOTE: Use with base mount blocks.

### Dummy block

|                         |       |      |
|-------------------------|-------|------|
| Dummy block, rear mount | MDB-2 | 0.11 |
|-------------------------|-------|------|

Dummy blocks are used when only one contact block or a compact device is used together with the DIN-Rail Adaptor

### 30 mm Adaptors for 22 mm operator (1.5-4 mm panels)

For Emergency stop pushbutton ①

|               |          |      |
|---------------|----------|------|
| Black plastic | KA1-8027 | 0.25 |
| Metal         | KA1-8028 | 0.74 |

For pushbuttons, selector switches, pilot lights, potentiometers and buzzers:

|               |          |      |
|---------------|----------|------|
| Black plastic | KA1-8029 | 0.35 |
| Metal         | KA1-8030 | 1.2  |

### Flush mounted adaptors (metal)

|                       |          |     |
|-----------------------|----------|-----|
| For pushbuttons       | KA1-8073 | 1.8 |
| For Selector switches | MA1-8074 | 1.8 |

### 30mm Gasket

|                                     |                 |  |
|-------------------------------------|-----------------|--|
| For 30mm adaptors for 22mm operator | 1SFA616920R8019 |  |
|-------------------------------------|-----------------|--|

### Lamp changing tool

|                             |          |       |
|-----------------------------|----------|-------|
| For LED bulbs and for bulbs | KA1-8072 | 0.071 |
|-----------------------------|----------|-------|

### Mounting tool for operator

|                                              |          |      |
|----------------------------------------------|----------|------|
| Mounting tool for tightening the locking nut | MA1-8015 | 0.74 |
| Mounting tool for power tool                 | MA1-8149 | 5.5  |

### Extra key

|                            |             |      |
|----------------------------|-------------|------|
| Ronis 455 (key code 71)    | SK616021-71 | 0.25 |
| Ronis 421 (key code 72)    | SK616021-72 | 0.25 |
| Ronis 3433-E (key code 73) | SK616021-73 | 0.25 |

### Locking nut

|                                |          |       |
|--------------------------------|----------|-------|
| Locking nut 22mm               | MA1-8019 | 0.035 |
| Locking nut 30mm w/22mm device | MA1-8134 |       |

The Locking nut can also be used with Compact Devices.

### Blanking plug

|                  |          |      |
|------------------|----------|------|
| Grey, 22mm       | MA1-8129 | 0.18 |
| Light grey, 22mm | MA1-8136 | 0.18 |
| Black, 22mm      | MA1-8130 | 0.18 |
| Black, 30mm      | MA1-8133 | 0.18 |

### Square bezel

|                |            |       |
|----------------|------------|-------|
| Black, plastic | SK616016-2 | 0.035 |
| Grey, plastic  | MA1-8124   | 0.035 |

① Illuminated pushbuttons and pilot lights must use white insert.

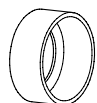
② For extended pushbuttons, insert "E" at the end of the catalog number. For compact pushbuttons, insert "P" at end of the catalog number.

## Accessories



Protective membrane

| Description                | Catalog number | Weight oz. |
|----------------------------|----------------|------------|
| <b>Protective membrane</b> |                |            |
| For flush button           | KA1-8052       | 0.071      |
| For extended button        | KA1-8002       | 0.071      |
| For double pushbutton      | MA1-8126       | 0.071      |



Protective ring



Protective cover

### Protective ring

|                              |            |       |
|------------------------------|------------|-------|
| Operator for protective ring | SK615512-1 | 0.071 |
|------------------------------|------------|-------|

Note: For flush and extended pushbuttons. To prevent accidental operation. Cannot be used together with Legend plate holder

### Protective cover

|                  |          |      |
|------------------|----------|------|
| Protective cover | KA1-8010 | 0.28 |
|------------------|----------|------|

Note: For flush pushbutton. To prevent accidental operation. Cannot be used together with Legend plate holder.



Bezel

### Bezel

#### For pushbutton

|               |          |       |
|---------------|----------|-------|
| Grey plastic  | KA1-8079 | 0.071 |
| black plastic | KA1-8022 | 0.071 |
| Chrome metal  | KA1-8021 | 0.53  |

#### For Selector switch

|               |          |       |
|---------------|----------|-------|
| Grey plastic  | KA1-8077 | 0.035 |
| black plastic | KA1-8080 | 0.035 |
| Chrome metal  | KA1-8024 | 0.35  |



Shroud for emergency stop

### Shroud for emergency stop

|        |          |      |
|--------|----------|------|
| Yellow | MA1-8053 | 0.71 |
| Grey   | MA1-8128 | 0.71 |

Note: For 40 mm Emergency stop pushbuttons and machine stop pushbuttons. To prevent accidental operation. With anti rotation tabs and slot for pad-lock and with water drainage. Not for use with plastic enclosures.



Lockable shroud

### Shroud for pilot devices

|                 |          |       |
|-----------------|----------|-------|
| Lockable shroud | MA1-8153 | 0.023 |
|-----------------|----------|-------|



Touch guard

### Touch guard for pushbuttons

|             |          |       |
|-------------|----------|-------|
| Touch guard | MA1-8152 | 0.009 |
|-------------|----------|-------|

## Accessories Lenses



Lens for Pilot light

| Description                    | Catalog number | Weight oz. |
|--------------------------------|----------------|------------|
| <b>Lenses for pilot lights</b> |                |            |
| Red                            | KA1-8031       | 0.071      |
| Green                          | KA1-8032       | 0.071      |
| Yellow                         | KA1-8033       | 0.071      |
| Blue                           | KA1-8034       | 0.071      |
| White                          | KA1-8035       | 0.071      |
| Clear                          | KA1-8038       | 0.071      |
| Fresnel light diffusion lens ① | KA1-8005       | 0.071      |

### Lenses for non-illuminated pushbuttons

#### Flush – opaque

|        |          |      |
|--------|----------|------|
| Red    | KA1-8081 | 0.53 |
| Green  | KA1-8082 | 0.53 |
| Yellow | KA1-8083 | 0.53 |
| Blue   | KA1-8084 | 0.53 |
| White  | KA1-8085 | 0.53 |
| Black  | KA1-8086 | 0.53 |
| Grey   | KA1-8087 | 0.53 |
| Clear  | KA1-8088 | 0.53 |

#### Extended - opaque

|        |          |      |
|--------|----------|------|
| Red    | KA1-8091 | 0.88 |
| Green  | KA1-8092 | 0.88 |
| Yellow | KA1-8093 | 0.88 |
| Blue   | KA1-8094 | 0.88 |
| White  | KA1-8095 | 0.88 |
| Black  | KA1-8096 | 0.88 |
| Grey   | KA1-8097 | 0.88 |
| Clear  | KA1-8098 | 0.88 |

### Lenses for illuminated pushbuttons

#### Flush – transparent

|        |          |      |
|--------|----------|------|
| Red    | KA1-8101 | 0.53 |
| Green  | KA1-8102 | 0.53 |
| Yellow | KA1-8103 | 0.53 |
| Blue   | KA1-8104 | 0.53 |
| White  | KA1-8105 | 0.53 |
| Clear  | KA1-8108 | 0.53 |

#### Extended - transparent

|        |          |      |
|--------|----------|------|
| Red    | KA1-8111 | 0.88 |
| Green  | KA1-8112 | 0.88 |
| Yellow | KA1-8113 | 0.88 |
| Blue   | KA1-8114 | 0.88 |
| White  | KA1-8115 | 0.88 |
| Clear  | KA1-8118 | 0.88 |

① Light diffusing lens insert is placed between the bulb and the lens.

## Text cap inserts

| Legend                                                                            | Cap color<br>① | Suffix<br>code ② | Flush button<br>catalog<br>number | Extended button<br>catalog<br>number | Pilot light<br>catalog<br>number |
|-----------------------------------------------------------------------------------|----------------|------------------|-----------------------------------|--------------------------------------|----------------------------------|
|  | White          | C82              | 1SFA616901R9036                   | —                                    | —                                |
| Start                                                                             | White          | C67              | 1SFA616901R2030                   | 1SFA616902R2030                      | 1SFA616903R2030                  |
| START                                                                             | Green          | C5               | 1SFA616906R1042                   | —                                    | —                                |
|                                                                                   | Black          | C81              | 1SFA616908R1042                   | —                                    | —                                |
| On                                                                                | White          | C68              | 1SFA616901R1020                   | 1SFA616902R1020                      | 1SFA616903R1020                  |
| ON                                                                                | White          | C69              | 1SFA616901R1039                   | —                                    | 1SFA616903R1039                  |
|                                                                                   | Green          | C70              | 1SFA616906R1039                   | —                                    | —                                |
|                                                                                   | Black          | C1               | 1SFA616908R1039                   | —                                    | —                                |
| Off                                                                               | White          | C71              | 1SFA616901R1019                   | 1SFA616902R1019                      | 1SFA616903R1019                  |
| OFF                                                                               | White          | C72              | —                                 | 1SFA616902R1040                      | —                                |
|                                                                                   | Red            | C73              | —                                 | 1SFA616905R1040                      | —                                |
|                                                                                   | Black          | C2               | 1SFA616908R1040                   | 1SFA616909R1040                      | —                                |
| Stop                                                                              | White          | C74              | 1SFA616901R1031                   | 1SFA616902R1031                      | 1SFA616903R1031                  |
| STOP                                                                              | Red            | C4               | 1SFA616904R1047                   | 1SFA616905R1047                      | —                                |
| Reset                                                                             | White          | C75              | 1SFA616901R1025                   | 1SFA616902R1025                      | 1SFA616903R1025                  |
| Blank                                                                             | White          | C15              | 1SFA616901R9000                   | 1SFA616902R9000                      | 1SFA616903R9000                  |
|                                                                                   | Green          | CG               | 29491468-2                        | 29491469-2                           | —                                |
| UP                                                                                | Green          | C11              | 1SFA616906R1043                   | —                                    | —                                |
| DOWN                                                                              | Green          | C12              | 1SFA616906R1044                   | —                                    | —                                |
| OPEN                                                                              | White          | C16              | 1SFA616901R1045                   | —                                    | —                                |
|                                                                                   | Green          | C19              | 1SFA616906R1045                   | —                                    | —                                |
| CLOSE                                                                             | White          | C17              | 1SFA616901R1046                   | —                                    | —                                |
|                                                                                   | Green          | C20              | 1SFA616906R1046                   | —                                    | —                                |
| REV                                                                               | Green          | C6               | 1SFA616906R1048                   | —                                    | —                                |
| FWD                                                                               | Green          | C7               | 1SFA616906R1049                   | —                                    | —                                |
| SLOW                                                                              | Green          | C8               | 1SFA616906R1050                   | —                                    | —                                |
| FAST                                                                              | Green          | C9               | 1SFA616906R1051                   | —                                    | —                                |
| JOG                                                                               | Green          | C10              | 1SFA616906R1052                   | —                                    | —                                |
| RESET                                                                             | Black          | C3               | 1SFA616908R1041                   | —                                    | —                                |
| LATCH                                                                             | White          | C18              | 1SFA616901R1053                   | —                                    | —                                |



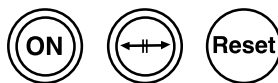
Flush  
pushbutton



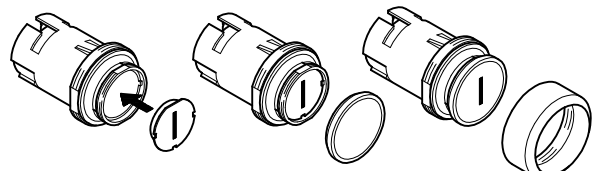
Extended  
pushbutton



Pilot light



Examples of inserts



1

2

3

Insert assembly

① Illuminated pushbuttons and pilot lights must use white insert.  
② Add suffix code to end of the catalog number.

## Technical data

### Standards and approvals

|                    |                                                                                                                                                                        |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IEC / EN 60947-1   | Low-Voltage Switchgear and Controlgear - Part 1: General rules                                                                                                         |
| IEC / EN 60947-5-1 | Low-Voltage Switchgear and Controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices                          |
| IEC / EN 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 / EN 60073     | Basic and safety principles for man-machine interface, marking and identification - Coding principles for indicators and actuators                                     |
| IEC / 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                                    |
| DIN 40050-9        | Road vehicles; Degrees of Protection (IP-code); protection against foreign objects; water and contact; electrical equipment                                            |
| UL 508             | Industrial Control Equipment                                                                                                                                           |
| CSA C22.2 No 14    | Industrial Control Equipment                                                                                                                                           |

### Environmental data

#### Degrees of protection

| Operators                                   | IEC/EN DIN    | UL/CSA                                |
|---------------------------------------------|---------------|---------------------------------------|
| Pushbutton: MP *                            | IP66          | Catalog number 1, 3R, 4, 4X, 12, 13   |
| Double pushbutton: MPD *                    | IP66          | Catalog number 1, 3R, 4, 4X, 12, 13   |
| Mushroom pushbutton: MPM *                  | IP66          | Catalog number 1, 3R, 4, 4X, 12, 13   |
| Emergency Stop: MPMT/P *                    | IP66          | Catalog number 1, 3R, 4, 4X, 12, 13   |
| Selector Switch: M2SS/M3SS *                | IP66          | Catalog number 1, 3R, 4, 4X, 12, 13   |
| Key-operated Selector Switch: M2SSK/M3SSK * | IP66          | Catalog number 1, 3R, 4, 4X, 12       |
| Toggle Switch: MTS2/MTS3 *                  | IP66          | Catalog number 1, 3R, 4, 4X, 12, 13   |
| Extreme Duty pushbutton: KP6                | -             | Catalog number 1, 3R, 4, 4X           |
| Reset pushbutton: KPR *                     | IP 66         | Catalog number 1, 3R, 4, 4X, 12, 13   |
| Joystick: MJS                               | IP66, 67, 69K | Catalog number 1, 4X (indoor), 12, 13 |
| Pilot lights: ML                            | IP66          | Catalog number 1, 3R, 4, 4X, 12, 13   |
| Buzzer: KB                                  | IP65          | Catalog number 4X                     |
| Potentiometer: KT *                         | IP66          | Catalog number 1, 3R, 4, 4X, 12, 13   |
| Contact block and Transformer block         | IP20          | -                                     |
| Plastic Enclosures                          | IP66          | Catalog number 1, 3R, 4, 4X, 12, 13   |
| Metallic Enclosures                         | IP66, 67, 69K | -                                     |

#### Temperature

|                                      |               |
|--------------------------------------|---------------|
| Ambient temperature during operation | -25 to +70 °C |
| Storage temperature                  | -40 to +85 °C |

\* With Chrome plastic bezel IP66 Catalog number 1, 12, 13

Please note that specified degree of protection is for operator mounted on panel. If other items are mounted in between, please make sure that they are correctly sealed.

### Technical Data

#### Terminals

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

|                       |                                                                                 |
|-----------------------|---------------------------------------------------------------------------------|
| Connectable Area      | min. 1 x 0.5 mm <sup>2</sup> /AWG 20<br>max. 2 x 2.5 mm <sup>2</sup> /2 x AWG14 |
| Tightening Torque     |                                                                                 |
| Operators Locking Nut | Min. 2 Nm / Max. 2.3 Nm                                                         |
| Cable Terminals       | 0.9 Nm                                                                          |

#### Material

No ozone depleting substances in the products.

All front of panel plastic components are made of polycarbonate

|                  |                                                                                                                                            |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| PC Polycarbonate | High impact strength, good outdoor resistance. Chemical resistance (see table below)                                                       |
| 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 high 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.                                                                       |

#### Chemical Resistance for Polycarbonate

| Chemical Class           | Effects                                                                                                                                                                      |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Acids                    | No significant effect under most typical conditions of concentration and temperature                                                                                         |
| Alcohols and Alkalis     | Generally compatible at low concentration and room temperature. Higher concentrations and elevated temperatures can result in etching and attack evidenced by decomposition. |
| Aliphatic Hydrocarbons   | Generally compatible                                                                                                                                                         |
| Amines                   | Surface crystallization and chemical attack. Avoid.                                                                                                                          |
| Aromatic Hydrocarbons    | Partial solvents and severe stress cracking agents (i.e., xylene, toluene). Avoid.                                                                                           |
| Detergents and Cleaners  | Mild soap solutions are generally compatible. Strong alkaline materials should be avoided.                                                                                   |
| Esters                   | Cause severe crystallization. Partial solvents. Avoid.                                                                                                                       |
| Greases and Oils         | Pure petroleum Catalog numbers generally compatible. Many additives used with them are not.                                                                                  |
| Halogenated Hydrocarbons | Solvents. Avoid.                                                                                                                                                             |
| Ketones                  | Cause severe crystallization and stress cracking. Partial solvents. Avoid.                                                                                                   |
| Silicone Oil and Greases | Generally compatible up to 85 °C.                                                                                                                                            |



### Approvals

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

For detail information please contact ABB

## Technical data

### Electrical data

#### Standard contact blocks

Self cleaning silver contacts, NC contact with positive opening. At voltages and currents below 24 V and 5.6 mA we recommend our Micro Switch blocks.

#### Ratings as per IEC 60947-5-1

|                                                                 |                                                  |                          |  |
|-----------------------------------------------------------------|--------------------------------------------------|--------------------------|--|
| Rated Insulation Voltage, $U_i$                                 |                                                  | 690 V                    |  |
| Rated Thermal Current, $I_{th}$                                 |                                                  | 10 A                     |  |
| Rated Operational Current, $I_e$<br>Utilization category AC 15, | at: 120 V<br>at: 230 V<br>at: 400 V<br>at: 690 V | 8 A<br>6 A<br>4 A<br>2 A |  |
| Rated Operational Current, $I_e$<br>utilisation category DC 13, | at: 24 V<br>at: 125 V<br>at: 250 V               | 5 A<br>1.1 A<br>0.55 A   |  |

#### Ratings as per UL, CSA, NEMA

|                           |                                                  |                              |                                                  |                                      |
|---------------------------|--------------------------------------------------|------------------------------|--------------------------------------------------|--------------------------------------|
|                           |                                                  | A600<br>AC                   |                                                  | Q600<br>DC                           |
| Rated Insulation Voltage  |                                                  | 600 V                        |                                                  | 600 V                                |
| Rated Thermal Current     |                                                  | 10 A                         |                                                  | 2.5 A                                |
| Rated Operational Current | at: 120 V<br>at: 240 V<br>at: 480 V<br>at: 600 V | 6 A<br>3 A<br>1.5 A<br>1.2 A | at: 125 V<br>at: 250 V<br>at: 480 V<br>at: 600 V | 0.55 A<br>0.27 A<br>0.10 A<br>0.10 A |

**Contact resistance** < 25 mΩ

**Compulsory function test** at: 5V, 16 mA

#### Max. number of contact blocks per operator

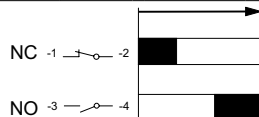
The Contact blocks can be stacked in max two levels on the 3- block holder. Only one level is accepted on the 5-block holder.

|                                                                                                                                                    |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------|---|
| pushbutton, Toggle Switch, Mushroom pushbutton,<br>Double pushbutton, Selector Switch, Key-operated<br>Selector Switch and Emergency Stop Operator | 6 |
| Joystick                                                                                                                                           | 8 |

### Short circuit protection

Max. fuse at 1 kA | gG 16A

#### Diagram for make-and-break contact



■ = Closed contact

#### Micro Switch block / Ratings as per IEC 60947-5-1

|                                                                 |           |       |
|-----------------------------------------------------------------|-----------|-------|
| Rated Insulation Voltage, $U_i$                                 |           | 125 V |
| Rated Thermal Current, $I_{th}$                                 |           | 3 A   |
| Rated Operational Current, $I_e$<br>utilization category AC 14, | at: 125 V | 0.5 A |
| Rated Operational Current, $I_e$<br>utilization category DC 13, | at: 24 V  | 0.3 A |
| Rated Operational Current, $I_e$<br>utilization category DC 12, | at: 24 V  | 0.1 A |

#### Minimum Switching Capacity

|                            |         |        |
|----------------------------|---------|--------|
| Standard Contact blocks    | 24 V DC | 5.6 mA |
| Gold plated Contact blocks | 5 V DC  | 12 mA  |
|                            | 12 V DC | 1 mA   |
| Micro Switch blocks        | 3 V DC  | 1 mA   |

#### Ratings as per UL 508

|  |          |       |
|--|----------|-------|
|  | 125 V AC | 3 A   |
|  | 60 V DC  | 0.2 A |
|  | 48 V DC  | 0.1 A |

### Mechanical data

#### Mechanical life

|                                                                                    |  |                       |
|------------------------------------------------------------------------------------|--|-----------------------|
| Standard Contact blocks                                                            |  | 10 million operations |
| pushbuttons, Momentary Mushroom pushbutton                                         |  | 2 million operations  |
| Selector Switches<br>Present standard<br>(no operation of center contact)          |  | 500 000 operations    |
| With operation of center contact                                                   |  | 250 000 operations    |
|                                                                                    |  | 150 000 operations    |
| Maintained Mushroom pushbutton, Key-operated Selector Switch and Double pushbutton |  | 500 000 operations    |
| Emergency Stop                                                                     |  | 100 000 operations    |
| Toggle Switch                                                                      |  | 1 million operations  |
| Joystick                                                                           |  | 500 000 operations    |
|                                                                                    |  | 400 000 operations    |
|                                                                                    |  | 300 000 operations    |

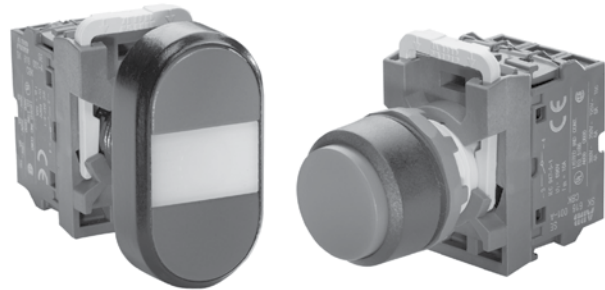




# Assembled Modular range

**ABB****Assembled Modular Range**

22mm &amp; 30mm



7

## General construction

- Snap-on feature reduces installation time
- Bezels: black plastic, chrome metal
- Contact block holder features rear mounting with quick-release locking mechanism for high security
- Buttons available in several colors
- Engraved text caps available
- Custom-specific markings on request
- UL File# E76003
- CSA File# LR19700

## Operators

- Pushbuttons, illuminated and non-illuminated
- Double pushbuttons, illuminated and non-illuminated
- Mushroom pushbuttons, illuminated and non-illuminated, 40mm and 60mm diameter
- Emergency stop pushbuttons, illuminated and non-illuminated, twist or pull release
- Selector switches, illuminated and non-illuminated, 2- or 3-position, short or long handle
- Key-operated selector switches, 2- or 3-position
- Toggle switches, 2- or 3-position

## Contact blocks

- Quick-mount, quick release contact block holder for fast and easy assembly/disassembly
- NO & NC contact blocks are color-coded for easy identification: Green = NO; Red = NC
- Silver-tipped contacts
- Wiping action for high reliability
- Low energy gold-plated contact blocks
- Contact block holder for three or five blocks in a single row

## Pilot lights

- Full voltage, resistor and transformer
- LED and filament bulbs available

## Mounting

### Exploded view

#### Contact block

Single pole with making or breaking contact

#### Holder

Available either for three or five blocks in one single row. Additional blocks can be stacked on holders for three blocks.

#### Nut

#### Legend plates

Of brushed aluminum with slots that guide the legend plate and the operator into the correct position. See the chapter, "Legend Plates" for more information.

#### Lamp block

Illuminated pushbuttons, illuminated selector switches and pilot lights have a lamp block in the center position of the holder.

#### Operator

Buttons, lenses and handles in several colors. Illuminated or non-illuminated.

#### Five block holder

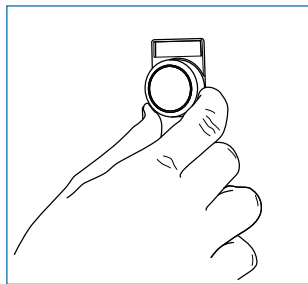
#### Legend plate holder

Of black plastic, insert of brushed aluminum. See the chapter, "Legend Plates" for more information.

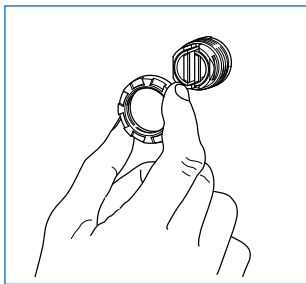
#### Bezels

Pushbuttons, selector switches and toggle switches with bezel in black plastic, chrome metal are available.

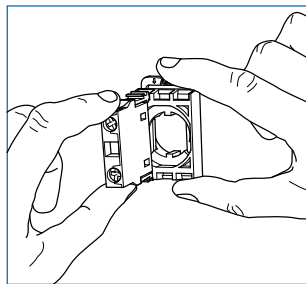
### Easy to mount



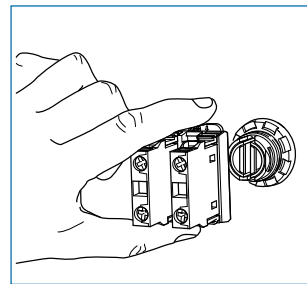
The operator is to be inserted from the front....



...and secured at the back with a nut.

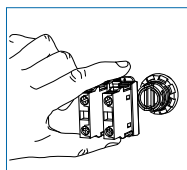
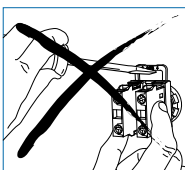


The contact blocks/lamp block are then snapped on to the holder...



...and the holder snaps on to the operator.

### ...and to remove



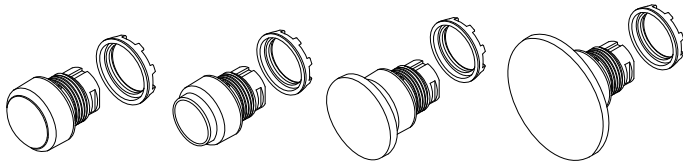
Press down the spring on the holder and pull the holder from the actuator.

# Selection guide

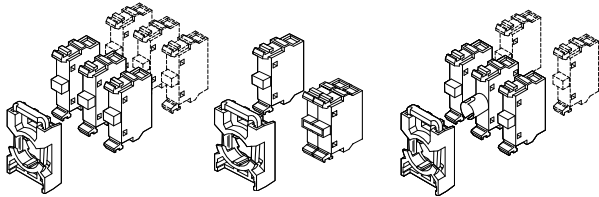
**Pilot Devices**  
Modular Range  
Assembled, 22 & 30mm

7

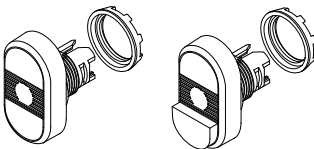
## Pushbuttons and Mushroom pushbuttons



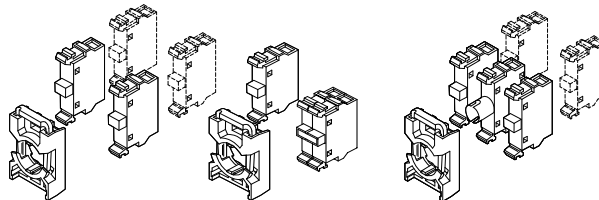
Contact block/lamp block combinations



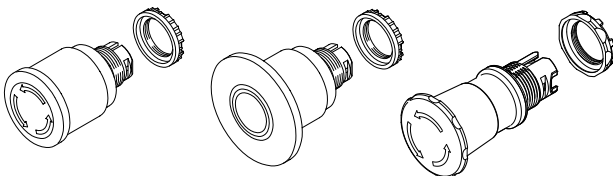
## Double pushbuttons



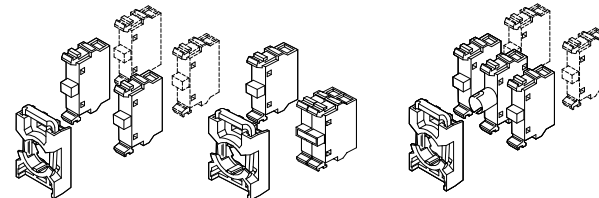
Contact block/lamp block combinations



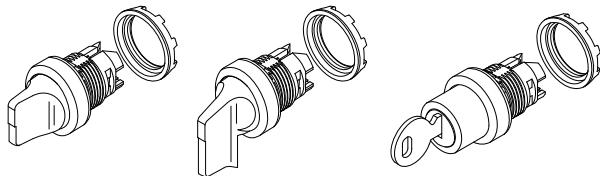
## Emergency stop pushbuttons



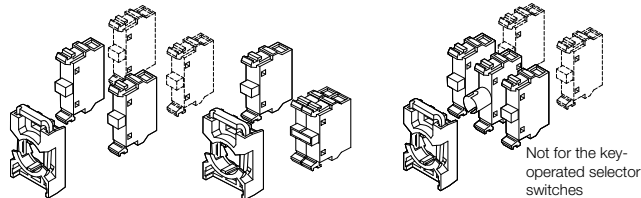
Contact block/lamp block combinations



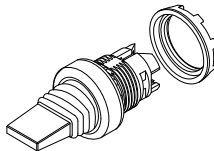
## Selector switches



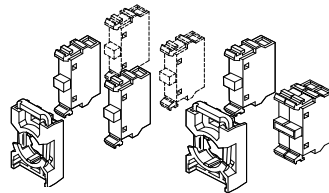
Contact block/lamp block combinations



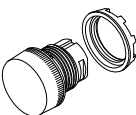
## Toggle switches



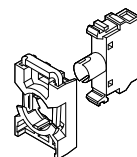
Contact block combinations



## Pilot lights



Lamp block combination



## Catalog number and list price explanation

Assembled pilot device catalog numbers are created by selecting the appropriate characters from the grid. Begin at the top of the grid and work down, adding the desired characters to the catalog number to create a specific product. The list price is found by adding the prices of all the individually selected options.

### Pushbuttons, non-illuminated

| Options                           | Catalog number characters |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|-----------------------------------|---------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Momentary flush                   |                           |   | M | P | 1 | - |   |   |   |   |   |   |   |   |   |
| Maintained flush                  |                           |   | M | P | 2 | - |   |   |   |   |   |   |   |   |   |
| Momentary extended                |                           |   | M | P | 3 | - |   |   |   |   |   |   |   |   |   |
| Maintained extended               |                           |   | M | P | 4 | - |   |   |   |   |   |   |   |   |   |
| Bezel, black plastic, with holder |                           |   |   |   |   |   | 4 | 0 |   |   |   |   |   |   |   |
| Bezel, chrome metal, with holder  |                           |   |   |   |   |   | 6 | 0 |   |   |   |   |   |   |   |
| Button color - Red                |                           |   |   |   |   |   |   |   | R |   |   |   |   |   |   |
| Button color - Green              |                           |   |   |   |   |   |   |   | G |   |   |   |   |   |   |
| Button color - Yellow             |                           |   |   |   |   |   |   |   | Y |   |   |   |   |   |   |
| Button color - Blue               |                           |   |   |   |   |   |   |   | L |   |   |   |   |   |   |
| Button color - White              |                           |   |   |   |   |   |   |   | W |   |   |   |   |   |   |
| Button color - Black              |                           |   |   |   |   |   |   |   | B |   |   |   |   |   |   |
| Button color - Clear              |                           |   |   |   |   |   |   |   | C |   |   |   |   |   |   |
| Contact blocks, 1 NO              |                           |   |   |   |   |   |   |   |   | 1 | 0 |   |   |   |   |
| Contact blocks, 2 NO              |                           |   |   |   |   |   |   |   |   | 2 | 0 |   |   |   |   |
| Contact blocks, 3 NO              |                           |   |   |   |   |   |   |   |   | 3 | 0 |   |   |   |   |
| Contact blocks, 1 NC              |                           |   |   |   |   |   |   |   |   | 0 | 1 |   |   |   |   |
| Contact blocks, 2 NC              |                           |   |   |   |   |   |   |   |   | 0 | 2 |   |   |   |   |
| Contact blocks, 3 NC              |                           |   |   |   |   |   |   |   |   | 0 | 3 |   |   |   |   |
| Contact blocks, 1 NO + 1 NC       |                           |   |   |   |   |   |   |   |   | 1 | 1 |   |   |   |   |
| Contact blocks, 2 NO + 1 NC       |                           |   |   |   |   |   |   |   |   | 2 | 1 |   |   |   |   |
| Contact blocks, 1 NO + 2 NC       |                           |   |   |   |   |   |   |   |   | 1 | 2 |   |   |   |   |
| Contact blocks, 1 NO, Gold        |                           |   |   |   |   |   |   |   |   | 1 | 0 | G |   |   |   |
| Contact blocks, 2 NO, Gold        |                           |   |   |   |   |   |   |   |   | 2 | 0 | G |   |   |   |
| Contact blocks, 3 NO, Gold        |                           |   |   |   |   |   |   |   |   | 3 | 0 | G |   |   |   |
| Contact blocks, 1 NC, Gold        |                           |   |   |   |   |   |   |   |   | 0 | 1 | G |   |   |   |
| Contact blocks, 2 NC, Gold        |                           |   |   |   |   |   |   |   |   | 0 | 2 | G |   |   |   |
| Contact blocks, 3 NC, Gold        |                           |   |   |   |   |   |   |   |   | 0 | 3 | G |   |   |   |
| Contact blocks, 1 NO + 1 NC, Gold |                           |   |   |   |   |   |   |   |   | 1 | 1 | G |   |   |   |
| Contact blocks, 2 NO + 1 NC, Gold |                           |   |   |   |   |   |   |   |   | 2 | 1 | G |   |   |   |
| Contact blocks, 1 NO + 2 NC, Gold |                           |   |   |   |   |   |   |   |   | 1 | 2 | G |   |   |   |
| Text Caps with Clear Lens Only    |                           |   |   |   |   |   |   |   | C |   |   |   | C | X | X |
| 5 Block Holder                    |                           |   |   |   |   |   |   |   |   |   |   |   |   |   | 5 |
| 30mm Black Plastic Adaptor Ring   | G                         | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 30mm Chrome Metal Adaptor Ring    | G                         | 2 |   |   |   |   |   |   |   |   |   |   |   |   |   |
|                                   |                           |   | M | P | 1 | - | 4 | 0 | R | 1 | 0 |   |   |   |   |

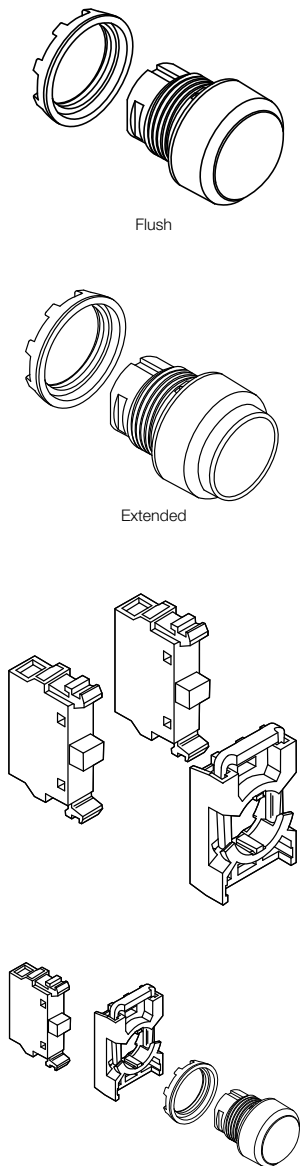
#### EXAMPLE:

What is the catalog number and price for a 22mm momentary flush pushbutton with a black bezel, red button & 1 NO contact block? Follow the arrows to see how the catalog number is determined.

# Pushbuttons Non-illuminated

Pilot Devices  
Modular Range  
Assembled, 22 & 30mm

## Pushbuttons, non-illuminated



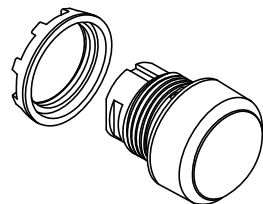
| Options                           |   |   |   | Catalog number characters |   |   |   |   |   |   |   |   |   |    |   |
|-----------------------------------|---|---|---|---------------------------|---|---|---|---|---|---|---|---|---|----|---|
| Momentary Flush                   |   | M | P | 1                         | - |   |   |   |   |   |   |   |   |    |   |
| Maintained Flush ①                |   | M | P | 2                         | - |   |   |   |   |   |   |   |   |    |   |
| Momentary Extended                |   | M | P | 3                         | - |   |   |   |   |   |   |   |   |    |   |
| Maintained Extended ①             |   | M | P | 4                         | - |   |   |   |   |   |   |   |   |    |   |
| Bezel, Black Plastic, with Holder |   |   |   |                           |   | 4 | 0 |   |   |   |   |   |   |    |   |
| Bezel, Chrome Metal, with Holder  |   |   |   |                           |   | 6 | 0 |   |   |   |   |   |   |    |   |
| Button Color - Red                |   |   |   |                           |   |   |   | R |   |   |   |   |   |    |   |
| Button Color - Green              |   |   |   |                           |   |   |   | G |   |   |   |   |   |    |   |
| Button Color - Yellow             |   |   |   |                           |   |   |   | Y |   |   |   |   |   |    |   |
| Button Color - Blue               |   |   |   |                           |   |   |   | L |   |   |   |   |   |    |   |
| Button Color - White              |   |   |   |                           |   |   |   | W |   |   |   |   |   |    |   |
| Button Color - Black              |   |   |   |                           |   |   |   | B |   |   |   |   |   |    |   |
| Button Color - Clear              |   |   |   |                           |   |   |   | C |   |   |   |   |   |    |   |
| Contact Blocks, 1NO               |   |   |   |                           |   |   |   |   | 1 | 0 |   |   |   |    |   |
| Contact Blocks, 2NO               |   |   |   |                           |   |   |   |   | 2 | 0 |   |   |   |    |   |
| Contact Blocks, 3NO               |   |   |   |                           |   |   |   |   | 3 | 0 |   |   |   |    |   |
| Contact Blocks, 1NC               |   |   |   |                           |   |   |   |   | 0 | 1 |   |   |   |    |   |
| Contact Blocks, 2NC               |   |   |   |                           |   |   |   |   | 0 | 2 |   |   |   |    |   |
| Contact Blocks, 3NC               |   |   |   |                           |   |   |   |   | 0 | 3 |   |   |   |    |   |
| Contact Blocks, 1NO+1NC           |   |   |   |                           |   |   |   |   | 1 | 1 |   |   |   |    |   |
| Contact Blocks, 2NO+1NC           |   |   |   |                           |   |   |   |   | 2 | 1 |   |   |   |    |   |
| Contact Blocks, 1NO+2NC           |   |   |   |                           |   |   |   |   | 1 | 2 |   |   |   |    |   |
| Contact Blocks, 1NO, Gold         |   |   |   |                           |   |   |   |   | 1 | 0 | G |   |   |    |   |
| Contact Blocks, 2NO, Gold         |   |   |   |                           |   |   |   |   | 2 | 0 | G |   |   |    |   |
| Contact Blocks, 3NO, Gold         |   |   |   |                           |   |   |   |   | 3 | 0 | G |   |   |    |   |
| Contact Blocks, 1NC, Gold         |   |   |   |                           |   |   |   |   | 0 | 1 | G |   |   |    |   |
| Contact Blocks, 2NC, Gold         |   |   |   |                           |   |   |   |   | 0 | 2 | G |   |   |    |   |
| Contact Blocks, 3NC, Gold         |   |   |   |                           |   |   |   |   | 0 | 3 | G |   |   |    |   |
| Contact Blocks, 1NO+1NC, Gold     |   |   |   |                           |   |   |   |   | 1 | 1 | G |   |   |    |   |
| Contact Blocks, 2NO+1NC, Gold     |   |   |   |                           |   |   |   |   | 2 | 1 | G |   |   |    |   |
| Contact Blocks, 1NO+2NC, Gold     |   |   |   |                           |   |   |   |   | 1 | 2 | G |   |   |    |   |
| Text Caps with Clear Lens Only    |   |   |   |                           |   |   |   | C |   |   |   | C | X | X② |   |
| 5 Block Holder                    |   |   |   |                           |   |   |   |   |   |   |   |   |   |    | 5 |
| 30mm Black Plastic Adaptor Ring   | G |   | 1 |                           |   |   |   |   |   |   |   |   |   |    |   |
| 30mm Chrome Metal Adaptor Ring    | G |   | 2 |                           |   |   |   |   |   |   |   |   |   |    |   |

See catalog number explanation on page 7.70.

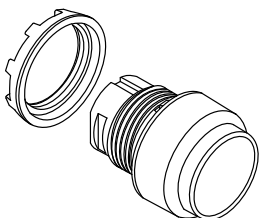
① No contact block in center position.  
② Replace "XX" with text cap legends from pages 7.72 - 7.74.

## Pushbuttons

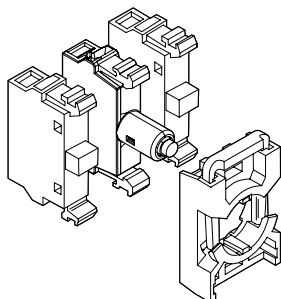
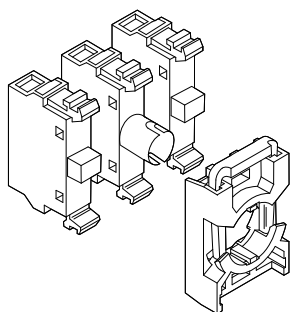
### Illuminated ①



Flush



Extended



### Pushbuttons, Illuminated ①

| Options                                  |   |   | Catalog number characters |   |   |  |   |   |   |   |   |   |   |   |   |   |    |
|------------------------------------------|---|---|---------------------------|---|---|--|---|---|---|---|---|---|---|---|---|---|----|
| Momentary Flush                          |   | M | P                         | 1 | - |  |   |   |   |   |   |   |   |   |   |   |    |
| Maintained Flush                         |   | M | P                         | 2 | - |  |   |   |   |   |   |   |   |   |   |   |    |
| Momentary Extended                       |   | M | P                         | 3 | - |  |   |   |   |   |   |   |   |   |   |   |    |
| Maintained Extended                      |   | M | P                         | 4 | - |  |   |   |   |   |   |   |   |   |   |   |    |
| Bezel, Black Plastic, with Holder        |   |   |                           |   | - |  | 4 |   |   |   |   |   |   |   |   |   |    |
| Bezel, Chrome Metal, with Holder         |   |   |                           |   | - |  | 6 |   |   |   |   |   |   |   |   |   |    |
| Lamp block, MLB-1, Bulb not Included     |   |   |                           |   | - |  |   | 2 |   |   |   |   |   |   |   |   |    |
| Lamp block, MLB-4, Bulb not Included     |   |   |                           |   | - |  |   | 5 |   |   |   |   |   |   |   |   |    |
| Lamp block, MLB-5, Bulb not Included     |   |   |                           |   | - |  |   | 6 |   |   |   |   |   |   |   |   |    |
| Lamp block w/integrated LED ☉            |   |   |                           |   | - |  |   | 7 |   |   |   |   |   |   |   |   |    |
| Lamp block w/zener diode, Bulb not incl. |   |   |                           |   | - |  |   | 8 |   |   |   |   |   |   |   |   |    |
| Button Color - Red                       |   |   |                           |   | - |  |   |   | R |   |   |   |   |   |   |   |    |
| Button Color - Green                     |   |   |                           |   | - |  |   |   | G |   |   |   |   |   |   |   |    |
| Button Color - Yellow                    |   |   |                           |   | - |  |   |   | Y |   |   |   |   |   |   |   |    |
| Button Color - Blue                      |   |   |                           |   | - |  |   |   | L |   |   |   |   |   |   |   |    |
| Button Color - White                     |   |   |                           |   | - |  |   |   | W |   |   |   |   |   |   |   |    |
| Button Color - Clear                     |   |   |                           |   | - |  |   |   | C |   |   |   |   |   |   |   |    |
| Contact Blocks, 1NO                      |   |   |                           |   | - |  |   |   |   | 1 | 0 |   |   |   |   |   |    |
| Contact Blocks, 2NO                      |   |   |                           |   | - |  |   |   |   | 2 | 0 |   |   |   |   |   |    |
| Contact Blocks, 3NO                      |   |   |                           |   | - |  |   |   |   | 3 | 0 |   |   |   |   |   |    |
| Contact Blocks, 1NC                      |   |   |                           |   | - |  |   |   |   | 0 | 1 |   |   |   |   |   |    |
| Contact Blocks, 2NC                      |   |   |                           |   | - |  |   |   |   | 0 | 2 |   |   |   |   |   |    |
| Contact Blocks, 3NC                      |   |   |                           |   | - |  |   |   |   | 0 | 3 |   |   |   |   |   |    |
| Contact Blocks, 1NO+1NC                  |   |   |                           |   | - |  |   |   |   | 1 | 1 |   |   |   |   |   |    |
| Contact Blocks, 2NO+1NC                  |   |   |                           |   | - |  |   |   |   | 2 | 1 |   |   |   |   |   |    |
| Contact Blocks, 1NO+2NC                  |   |   |                           |   | - |  |   |   |   | 1 | 2 |   |   |   |   |   |    |
| Contact Blocks, 1NO, Gold                |   |   |                           |   | - |  |   |   |   | 1 | 0 | G |   |   |   |   |    |
| Contact Blocks, 2NO, Gold                |   |   |                           |   | - |  |   |   |   | 2 | 0 | G |   |   |   |   |    |
| Contact Blocks, 3NO, Gold                |   |   |                           |   | - |  |   |   |   | 3 | 0 | G |   |   |   |   |    |
| Contact Blocks, 1NC, Gold                |   |   |                           |   | - |  |   |   |   | 0 | 1 | G |   |   |   |   |    |
| Contact Blocks, 2NC, Gold                |   |   |                           |   | - |  |   |   |   | 0 | 2 | G |   |   |   |   |    |
| Contact Blocks, 3NC, Gold                |   |   |                           |   | - |  |   |   |   | 0 | 3 | G |   |   |   |   |    |
| Contact Blocks, 1NO+1NC, Gold            |   |   |                           |   | - |  |   |   |   | 1 | 1 | G |   |   |   |   |    |
| Contact Blocks, 2NO+1NC, Gold            |   |   |                           |   | - |  |   |   |   | 2 | 1 | G |   |   |   |   |    |
| Contact Blocks, 1NO+2NC, Gold            |   |   |                           |   | - |  |   |   |   | 1 | 2 | G |   |   |   |   |    |
| LED 12VDC                                |   |   |                           |   | - |  |   |   |   |   |   |   | L | 7 |   |   |    |
| LED 24VAC/DC                             |   |   |                           |   | - |  |   |   |   |   |   |   | L | 8 |   |   |    |
| LED 48VAC/DC                             |   |   |                           |   | - |  |   |   |   |   |   |   | L | 9 |   |   |    |
| LED 60VAC/DC                             |   |   |                           |   | - |  |   |   |   |   |   |   | L | 6 |   | 0 |    |
| LED 110-130VAC                           |   |   |                           |   | - |  |   |   |   |   |   |   | L | 1 |   |   |    |
| LED 110-130VAC/DC                        |   |   |                           |   | - |  |   |   |   |   |   |   | L | 1 |   | 3 |    |
| LED 230V AC/DC                           |   |   |                           |   | - |  |   |   |   |   |   |   | L | 2 |   |   |    |
| LED 230V AC - Integrated only            |   |   |                           |   | - |  |   |   |   |   |   |   | L | 2 |   | 3 |    |
| LED 380V AC - Integrated only            |   |   |                           |   | - |  |   |   |   |   |   |   | L | 3 |   | 8 |    |
| LED 415V AC - Integrated only            |   |   |                           |   | - |  |   |   |   |   |   |   | L | 4 |   | 1 |    |
| Transformer Block 110-127/24VLED         |   |   |                           |   | - |  |   |   |   |   |   |   | T | L | 1 |   |    |
| Transformer Block 220-240/24VLED         |   |   |                           |   | - |  |   |   |   |   |   |   | T | L | 2 |   |    |
| Transformer Block 380-420/24VLED         |   |   |                           |   | - |  |   |   |   |   |   |   | T | L | 3 |   |    |
| Transformer Block 440-480/24VLED         |   |   |                           |   | - |  |   |   |   |   |   |   | T | L | 4 |   |    |
| Text Caps with Clear Lens Only           |   |   |                           |   | - |  |   |   | C |   |   |   |   |   |   | C | X  |
| 5 Block Holder                           |   |   |                           |   | - |  |   |   |   |   |   |   |   |   |   |   | X☉ |
| 30mm Black Plastic Adaptor Ring          | G |   | 1                         |   | - |  |   |   |   |   |   |   |   |   |   |   | 5  |
| 30mm Chrome Metal Adaptor Ring           | G |   | 2                         |   | - |  |   |   |   |   |   |   |   |   |   |   |    |

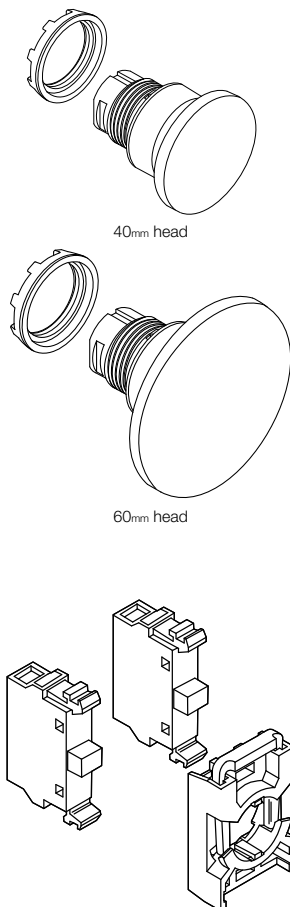
See catalog number explanation on page 7.70.

- ① No contact block in center position.
- ② No LED or transformer block can be combined with "illuminated without lamp block" selection.
- ③ Includes one diode chip integrated into lamp block.
- ④ Replace "XX" with text cap legends from pages 7.72 - 7.74

## Mushroom pushbuttons

### Non-illuminated, momentary

#### Mushroom pushbuttons, non-illuminated



| Options                           | Catalog number characters |   |   |   |   |   |   |   |   |   |   |   |
|-----------------------------------|---------------------------|---|---|---|---|---|---|---|---|---|---|---|
| Momentary, 40 mm                  |                           |   | M | P | M | 1 | - |   |   |   |   |   |
| Momentary, 60 mm                  |                           |   | M | P | M | 2 | - |   |   |   |   |   |
| Bezel, Black Plastic, with Holder |                           |   |   |   |   |   | - | 4 | 0 |   |   |   |
| Bezel, Chrome Metal, with Holder  |                           |   |   |   |   |   | - | 6 | 0 |   |   |   |
| Button Color - Red                |                           |   |   |   |   |   | - |   |   | R |   |   |
| Button Color - Yellow             |                           |   |   |   |   |   | - |   |   | Y |   |   |
| Button Color - Black              |                           |   |   |   |   |   | - |   |   | B |   |   |
| Contact Blocks, 1NO               |                           |   |   |   |   |   | - |   |   | 1 | 0 |   |
| Contact Blocks, 2NO               |                           |   |   |   |   |   | - |   |   | 2 | 0 |   |
| Contact Blocks, 3NO               |                           |   |   |   |   |   | - |   |   | 3 | 0 |   |
| Contact Blocks, 1NC               |                           |   |   |   |   |   | - |   |   | 0 | 1 |   |
| Contact Blocks, 2NC               |                           |   |   |   |   |   | - |   |   | 0 | 2 |   |
| Contact Blocks, 3NC               |                           |   |   |   |   |   | - |   |   | 0 | 3 |   |
| Contact Blocks, 1NO+1NC           |                           |   |   |   |   |   | - |   |   | 1 | 1 |   |
| Contact Blocks, 2NO+1NC           |                           |   |   |   |   |   | - |   |   | 2 | 1 |   |
| Contact Blocks, 1NO+2NC           |                           |   |   |   |   |   | - |   |   | 1 | 2 |   |
| Contact Blocks, 1NO, Gold         |                           |   |   |   |   |   | - |   |   | 1 | 0 | G |
| Contact Blocks, 2NO, Gold         |                           |   |   |   |   |   | - |   |   | 2 | 0 | G |
| Contact Blocks, 3NO, Gold         |                           |   |   |   |   |   | - |   |   | 3 | 0 | G |
| Contact Blocks, 1NC, Gold         |                           |   |   |   |   |   | - |   |   | 0 | 1 | G |
| Contact Blocks, 2NC, Gold         |                           |   |   |   |   |   | - |   |   | 0 | 2 | G |
| Contact Blocks, 3NC, Gold         |                           |   |   |   |   |   | - |   |   | 0 | 3 | G |
| Contact Blocks, 1NO+1NC, Gold     |                           |   |   |   |   |   | - |   |   | 1 | 1 | G |
| Contact Blocks, 2NO+1NC, Gold     |                           |   |   |   |   |   | - |   |   | 2 | 1 | G |
| Contact Blocks, 1NO+2NC, Gold     |                           |   |   |   |   |   | - |   |   | 1 | 2 | G |
| 5 Block Holder                    |                           |   |   |   |   |   | - |   |   |   |   | 5 |
| 30mm Black Plastic Adaptor Ring   | G                         | 1 |   |   |   |   | - |   |   |   |   |   |
| 30mm Chrome Metal Adaptor Ring    | G                         | 2 |   |   |   |   | - |   |   |   |   |   |

See catalog number explanation on page 7.70.



## Mushroom pushbuttons Illuminated, momentary ①

### Mushroom pushbuttons, illuminated, momentary ①

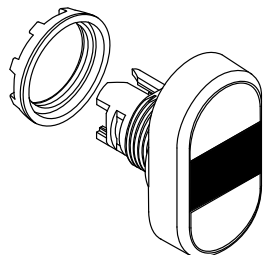
| Options                                     | Catalog number characters |   |   |   |   |   |   |   |   |   |  |   |   |   |  |   |
|---------------------------------------------|---------------------------|---|---|---|---|---|---|---|---|---|--|---|---|---|--|---|
| Momentary, 40 mm                            |                           |   | M | P | M | 1 | - |   |   |   |  |   |   |   |  |   |
| Momentary, 60 mm                            |                           |   | M | P | M | 2 | - |   |   |   |  |   |   |   |  |   |
| Bezel, Black Plastic, with Holder           |                           |   |   |   |   | - | 4 |   |   |   |  |   |   |   |  |   |
| Bezel, Chrome Metal, with Holder            |                           |   |   |   |   | - | 6 |   |   |   |  |   |   |   |  |   |
| Lamp block, MLB-1, Bulb not Included        |                           |   |   |   |   | - | 2 |   |   |   |  |   |   |   |  |   |
| Lamp block, MLB-4, Bulb not Included        |                           |   |   |   |   | - | 5 |   |   |   |  |   |   |   |  |   |
| Lamp block, MLB-5, Bulb not Included        |                           |   |   |   |   | - | 6 |   |   |   |  |   |   |   |  |   |
| Lamp block w/integrated LED ②               |                           |   |   |   |   | - | 7 |   |   |   |  |   |   |   |  |   |
| Lamp block with zener diode, bulb not incl. |                           |   |   |   |   | - | 8 |   |   |   |  |   |   |   |  |   |
| Button Color - Red                          |                           |   |   |   |   | - |   |   | R |   |  |   |   |   |  |   |
| Button Color - Yellow                       |                           |   |   |   |   | - |   |   | Y |   |  |   |   |   |  |   |
| Button Color - Green (40mm only)            |                           |   |   |   |   | - |   |   | G |   |  |   |   |   |  |   |
| Contact Blocks, 1NO                         |                           |   |   |   |   | - |   | 1 | 0 |   |  |   |   |   |  |   |
| Contact Blocks, 2NO                         |                           |   |   |   |   | - |   | 2 | 0 |   |  |   |   |   |  |   |
| Contact Blocks, 3NO                         |                           |   |   |   |   | - |   | 3 | 0 |   |  |   |   |   |  |   |
| Contact Blocks, 1NC                         |                           |   |   |   |   | - |   | 0 | 1 |   |  |   |   |   |  |   |
| Contact Blocks, 2NC                         |                           |   |   |   |   | - |   | 0 | 2 |   |  |   |   |   |  |   |
| Contact Blocks, 3NC                         |                           |   |   |   |   | - |   | 0 | 3 |   |  |   |   |   |  |   |
| Contact Blocks, 1NO+1NC                     |                           |   |   |   |   | - |   | 1 | 1 |   |  |   |   |   |  |   |
| Contact Blocks, 2NO+1NC                     |                           |   |   |   |   | - |   | 2 | 1 |   |  |   |   |   |  |   |
| Contact Blocks, 1NO+2NC                     |                           |   |   |   |   | - |   | 1 | 2 |   |  |   |   |   |  |   |
| Contact Blocks, 1NO, Gold                   |                           |   |   |   |   | - |   | 1 | 0 | G |  |   |   |   |  |   |
| Contact Blocks, 2NO, Gold                   |                           |   |   |   |   | - |   | 2 | 0 | G |  |   |   |   |  |   |
| Contact Blocks, 3NO, Gold                   |                           |   |   |   |   | - |   | 3 | 0 | G |  |   |   |   |  |   |
| Contact Blocks, 1NC, Gold                   |                           |   |   |   |   | - |   | 0 | 1 | G |  |   |   |   |  |   |
| Contact Blocks, 2NC, Gold                   |                           |   |   |   |   | - |   | 0 | 2 | G |  |   |   |   |  |   |
| Contact Blocks, 3NC, Gold                   |                           |   |   |   |   | - |   | 0 | 3 | G |  |   |   |   |  |   |
| Contact Blocks, 1NO+1NC, Gold               |                           |   |   |   |   | - |   | 1 | 1 | G |  |   |   |   |  |   |
| Contact Blocks, 2NO+1NC, Gold               |                           |   |   |   |   | - |   | 2 | 1 | G |  |   |   |   |  |   |
| Contact Blocks, 1NO+2NC, Gold               |                           |   |   |   |   | - |   | 1 | 2 | G |  |   |   |   |  |   |
| LED 12VDC                                   |                           |   |   |   |   | - |   |   |   |   |  | L | 7 |   |  |   |
| LED 24VAC/DC                                |                           |   |   |   |   | - |   |   |   |   |  | L | 8 |   |  |   |
| LED 48VAC/DC                                |                           |   |   |   |   | - |   |   |   |   |  | L | 9 |   |  |   |
| LED 60VAC/DC                                |                           |   |   |   |   | - |   |   |   |   |  | L | 6 | 0 |  |   |
| LED 110-130VAC                              |                           |   |   |   |   | - |   |   |   |   |  | L | 1 |   |  |   |
| LED 110-130VAC/DC                           |                           |   |   |   |   | - |   |   |   |   |  | L | 1 | 3 |  |   |
| LED 230V, AC/DC                             |                           |   |   |   |   | - |   |   |   |   |  | L | 2 |   |  |   |
| LED 230V, AC-integrated only                |                           |   |   |   |   | - |   |   |   |   |  | L | 2 | 3 |  |   |
| LED 380V, AC-integrated only                |                           |   |   |   |   | - |   |   |   |   |  | L | 3 | 8 |  |   |
| LED 415V, AC-integrated only                |                           |   |   |   |   | - |   |   |   |   |  | L | 4 | 1 |  |   |
| Transformer Block 110-127/24VLED            |                           |   |   |   |   | - |   |   |   |   |  | T | L | 1 |  |   |
| Transformer Block 220-240/24VLED            |                           |   |   |   |   | - |   |   |   |   |  | T | L | 2 |  |   |
| Transformer Block 380-420/24VLED            |                           |   |   |   |   | - |   |   |   |   |  | T | L | 3 |  |   |
| Transformer Block 440-480/24VLED            |                           |   |   |   |   | - |   |   |   |   |  | T | L | 4 |  |   |
| 5 Block Holder                              |                           |   |   |   |   | - |   |   |   |   |  |   |   |   |  | 5 |
| 30mm Black Plastic Adaptor Ring             | G                         | 1 |   |   |   | - |   |   |   |   |  |   |   |   |  |   |
| 30mm Chrome Metal Adaptor Ring              | G                         | 2 |   |   |   | - |   |   |   |   |  |   |   |   |  |   |

See catalog number explanation on page 7.70.

① No contact block in center position.  
② Includes one diode chip integrated into lamp block.



## Double pushbuttons, Flush/flush, non-illuminated ①

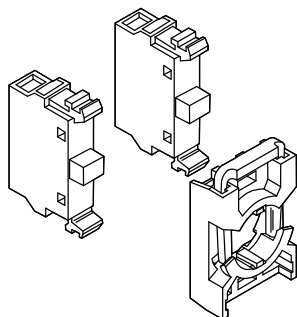


Double pushbutton

### Double pushbuttons, flush/flush, non-illuminated ①

| Options                              | Catalog number characters |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------------------------------------|---------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Flush/Flush, Green/Red               | M                         | P | D | 1 | - | - | - | - | - | - | - | - | - | - | - |
| Flush/Flush, Green/Red, I/O          | M                         | P | D | 2 | - | - | - | - | - | - | - | - | - | - | - |
| Flush/Flush, Green/Red, ON/OFF       | M                         | P | D | 3 | - | - | - | - | - | - | - | - | - | - | - |
| Flush/Flush, Green/Red, START/STOP   | M                         | P | D | 4 | - | - | - | - | - | - | - | - | - | - | - |
| Flush/Flush, White/Black             | M                         | P | D | 5 | - | - | - | - | - | - | - | - | - | - | - |
| Flush/Flush, White/Black, I/O        | M                         | P | D | 6 | - | - | - | - | - | - | - | - | - | - | - |
| Flush/Flush, White/Black, ON/OFF     | M                         | P | D | 7 | - | - | - | - | - | - | - | - | - | - | - |
| Flush/Flush, White/Black, START/STOP | M                         | P | D | 8 | - | - | - | - | - | - | - | - | - | - | - |
| With Holder                          | -                         | - | - | - | - | 2 | 0 | - | - | - | - | - | - | - | - |
| Center Lens Color - Black            | -                         | - | - | - | - | - | - | B | - | - | - | - | - | - | - |
| Contact Blocks, 1NO                  | -                         | - | - | - | - | - | - | - | 1 | 0 | - | - | - | - | - |
| Contact Blocks, 2NO                  | -                         | - | - | - | - | - | - | - | 2 | 0 | - | - | - | - | - |
| Contact Blocks, 3NO                  | -                         | - | - | - | - | - | - | - | 3 | 0 | - | - | - | - | - |
| Contact Blocks, 1NC                  | -                         | - | - | - | - | - | - | - | 0 | 1 | - | - | - | - | - |
| Contact Blocks, 2NC                  | -                         | - | - | - | - | - | - | - | 0 | 2 | - | - | - | - | - |
| Contact Blocks, 3NC                  | -                         | - | - | - | - | - | - | - | 0 | 3 | - | - | - | - | - |
| Contact Blocks, 1NO+1NC              | -                         | - | - | - | - | - | - | - | 1 | 1 | - | - | - | - | - |
| Contact Blocks, 2NO+1NC              | -                         | - | - | - | - | - | - | - | 2 | 1 | - | - | - | - | - |
| Contact Blocks, 1NO+2NC              | -                         | - | - | - | - | - | - | - | 1 | 2 | - | - | - | - | - |
| Contact Blocks, 1NO, Gold            | -                         | - | - | - | - | - | - | - | 1 | 0 | - | G | - | - | - |
| Contact Blocks, 2NO, Gold            | -                         | - | - | - | - | - | - | - | 2 | 0 | - | G | - | - | - |
| Contact Blocks, 3NO, Gold            | -                         | - | - | - | - | - | - | - | 3 | 0 | - | G | - | - | - |
| Contact Blocks, 1NC, Gold            | -                         | - | - | - | - | - | - | - | 0 | 1 | - | G | - | - | - |
| Contact Blocks, 2NC, Gold            | -                         | - | - | - | - | - | - | - | 0 | 2 | - | G | - | - | - |
| Contact Blocks, 3NC, Gold            | -                         | - | - | - | - | - | - | - | 0 | 3 | - | G | - | - | - |
| Contact Blocks, 1NO+1NC, Gold        | -                         | - | - | - | - | - | - | - | 1 | 1 | - | G | - | - | - |
| Contact Blocks, 2NO+1NC, Gold        | -                         | - | - | - | - | - | - | - | 2 | 1 | - | G | - | - | - |
| Contact Blocks, 1NO+2NC, Gold        | -                         | - | - | - | - | - | - | - | 1 | 2 | - | G | - | - | - |
| 5 Block Holder                       | -                         | - | - | - | - | - | - | - | - | - | - | - | - | - | 5 |

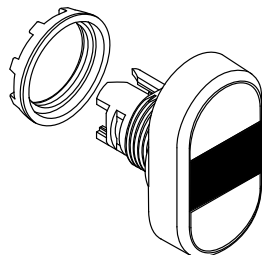
See catalog number explanation on page 7.70.



① No contact block in center position.

## Double pushbuttons

### Flush/flush, illuminated center ①



Double pushbutton, flush/flush

#### Double pushbuttons, flush/flush, illuminated center ①

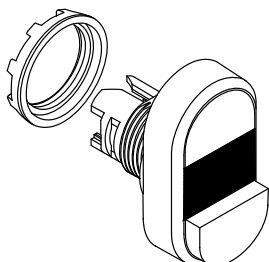
| Options                                     | Catalog number characters |   |   |   |   |   |   |   |   |   |  |   |   |   |   |
|---------------------------------------------|---------------------------|---|---|---|---|---|---|---|---|---|--|---|---|---|---|
| Flush/Flush, Green/Red                      | M                         | P | D | 1 | - |   |   |   |   |   |  |   |   |   |   |
| Flush/Flush, Green/Red, I/O                 | M                         | P | D | 2 | - |   |   |   |   |   |  |   |   |   |   |
| Flush/Flush, Green/Red, ON/OFF              | M                         | P | D | 3 | - |   |   |   |   |   |  |   |   |   |   |
| Flush/Flush, Green/Red, START/STOP          | M                         | P | D | 4 | - |   |   |   |   |   |  |   |   |   |   |
| Flush/Flush, White/Black                    | M                         | P | D | 5 | - |   |   |   |   |   |  |   |   |   |   |
| Flush/Flush, White/Black, I/O               | M                         | P | D | 6 | - |   |   |   |   |   |  |   |   |   |   |
| Flush/Flush, White/Black, ON/OFF            | M                         | P | D | 7 | - |   |   |   |   |   |  |   |   |   |   |
| Flush/Flush, White/Black, START/STOP        | M                         | P | D | 8 | - |   |   |   |   |   |  |   |   |   |   |
| With Holder                                 |                           |   |   |   |   | 2 |   |   |   |   |  |   |   |   |   |
| Lamp block, MLB-1, Bulb not included        |                           |   |   |   |   |   | 2 |   |   |   |  |   |   |   |   |
| Lamp block, MLB-4, Bulb not included        |                           |   |   |   |   |   | 5 |   |   |   |  |   |   |   |   |
| Lamp block, MLB-5, Bulb not included        |                           |   |   |   |   |   | 6 |   |   |   |  |   |   |   |   |
| Lamp block w/integrated LED ③               |                           |   |   |   |   |   | 7 |   |   |   |  |   |   |   |   |
| Lamp block with zener diode, bulb not incl. |                           |   |   |   |   |   | 8 |   |   |   |  |   |   |   |   |
| Center Lens Color - Red                     |                           |   |   |   |   |   |   | R |   |   |  |   |   |   |   |
| Center Lens Color - Yellow                  |                           |   |   |   |   |   |   | Y |   |   |  |   |   |   |   |
| Center Lens Color - Green                   |                           |   |   |   |   |   |   | G |   |   |  |   |   |   |   |
| Center Lens Color - Clear                   |                           |   |   |   |   |   |   | C |   |   |  |   |   |   |   |
| Contact Blocks, 1NO                         |                           |   |   |   |   |   |   |   | 1 | 0 |  |   |   |   |   |
| Contact Blocks, 2NO                         |                           |   |   |   |   |   |   |   | 2 | 0 |  |   |   |   |   |
| Contact Blocks, 3NO                         |                           |   |   |   |   |   |   |   | 3 | 0 |  |   |   |   |   |
| Contact Blocks, 1NC                         |                           |   |   |   |   |   |   |   | 0 | 1 |  |   |   |   |   |
| Contact Blocks, 2NC                         |                           |   |   |   |   |   |   |   | 0 | 2 |  |   |   |   |   |
| Contact Blocks, 3NC                         |                           |   |   |   |   |   |   |   | 0 | 3 |  |   |   |   |   |
| Contact Blocks, 1NO+1NC                     |                           |   |   |   |   |   |   |   | 1 | 1 |  |   |   |   |   |
| Contact Blocks, 2NO+1NC                     |                           |   |   |   |   |   |   |   | 2 | 1 |  |   |   |   |   |
| Contact Blocks, 1NO+2NC                     |                           |   |   |   |   |   |   |   | 1 | 2 |  |   |   |   |   |
| Contact Blocks, 1NO, Gold                   |                           |   |   |   |   |   |   |   | 1 | 0 |  | G |   |   |   |
| Contact Blocks, 2NO, Gold                   |                           |   |   |   |   |   |   |   | 2 | 0 |  | G |   |   |   |
| Contact Blocks, 3NO, Gold                   |                           |   |   |   |   |   |   |   | 3 | 0 |  | G |   |   |   |
| Contact Blocks, 1NC, Gold                   |                           |   |   |   |   |   |   |   | 0 | 1 |  | G |   |   |   |
| Contact Blocks, 2NC, Gold                   |                           |   |   |   |   |   |   |   | 0 | 2 |  | G |   |   |   |
| Contact Blocks, 3NC, Gold                   |                           |   |   |   |   |   |   |   | 0 | 3 |  | G |   |   |   |
| Contact Blocks, 1NO+1NC, Gold               |                           |   |   |   |   |   |   |   | 1 | 1 |  | G |   |   |   |
| Contact Blocks, 2NO+1NC, Gold               |                           |   |   |   |   |   |   |   | 2 | 1 |  | G |   |   |   |
| Contact Blocks, 1NO+2NC, Gold               |                           |   |   |   |   |   |   |   | 1 | 2 |  | G |   |   |   |
| LED 12VDC                                   |                           |   |   |   |   |   |   |   |   |   |  | L | 7 |   |   |
| LED 24VAC/DC                                |                           |   |   |   |   |   |   |   |   |   |  | L | 8 |   |   |
| LED 48VAC/DC                                |                           |   |   |   |   |   |   |   |   |   |  | L | 9 |   |   |
| LED 60VAC/DC                                |                           |   |   |   |   |   |   |   |   |   |  | L | 6 | 0 |   |
| LED 110-130VAC                              |                           |   |   |   |   |   |   |   |   |   |  | L | 1 |   |   |
| LED 110-130VAC/DC                           |                           |   |   |   |   |   |   |   |   |   |  | L | 1 | 3 |   |
| LED 230V AC/DC                              |                           |   |   |   |   |   |   |   |   |   |  | L | 2 |   |   |
| LED 230V, AC-integrated only                |                           |   |   |   |   |   |   |   |   |   |  | L | 2 | 3 |   |
| LED 380V, AC-integrated only                |                           |   |   |   |   |   |   |   |   |   |  | L | 3 | 8 |   |
| LED 415V, AC-integrated only                |                           |   |   |   |   |   |   |   |   |   |  | L | 4 | 1 |   |
| Transformer Block 110-127/24VLED            |                           |   |   |   |   |   |   |   |   |   |  | T | L | 1 |   |
| Transformer Block 220-240/24VLED            |                           |   |   |   |   |   |   |   |   |   |  | T | L | 2 |   |
| Transformer Block 380-420/24VLED            |                           |   |   |   |   |   |   |   |   |   |  | T | L | 3 |   |
| Transformer Block 440-480/24VLED            |                           |   |   |   |   |   |   |   |   |   |  | T | L | 4 |   |
| 5 Block Holder                              |                           |   |   |   |   |   |   |   |   |   |  |   |   |   | 5 |

See catalog number explanation on page 7.70.

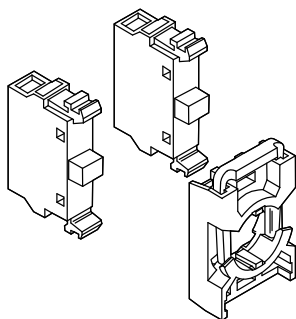
① No contact block in center position.  
② No LED or transformer block can be combined with "illuminated without lamp block" selection.  
③ Includes one diode chip integrated into lamp block.

## Double pushbuttons

### Flush/extended, non-illuminated ①



Double pushbutton, flush/extended



#### Double pushbuttons, flush/extended, non-illuminated ①

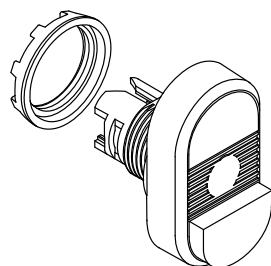
| Options                                 | Catalog number characters |   |   |   |   |   |   |   |   |   |   |  |  |   |   |
|-----------------------------------------|---------------------------|---|---|---|---|---|---|---|---|---|---|--|--|---|---|
| Flush/extended, Green/Red               | M                         | P | D | 1 | 2 | - |   |   |   |   |   |  |  |   |   |
| Flush/extended, Green/Red, I/O          | M                         | P | D | 1 | 3 | - |   |   |   |   |   |  |  |   |   |
| Flush/extended, Green/Red, ON/OFF       | M                         | P | D | 1 | 4 | - |   |   |   |   |   |  |  |   |   |
| Flush/extended, Green/Red, START/STOP   | M                         | P | D | 1 | 5 | - |   |   |   |   |   |  |  |   |   |
| Flush/extended, White/Black             | M                         | P | D | 1 | 6 | - |   |   |   |   |   |  |  |   |   |
| Flush/extended, White/Black, I/O        | M                         | P | D | 1 | 7 | - |   |   |   |   |   |  |  |   |   |
| Flush/extended, White/Black, ON/OFF     | M                         | P | D | 1 | 8 | - |   |   |   |   |   |  |  |   |   |
| Flush/extended, White/Black, START/STOP | M                         | P | D | 1 | 9 | - |   |   |   |   |   |  |  |   |   |
| With Holder                             |                           |   |   |   |   |   | 2 | 0 |   |   |   |  |  |   |   |
| Center Lens Color - Black               |                           |   |   |   |   |   |   |   | B |   |   |  |  |   |   |
| Contact Blocks, 1NO                     |                           |   |   |   |   |   |   |   |   | 1 | 0 |  |  |   |   |
| Contact Blocks, 2NO                     |                           |   |   |   |   |   |   |   |   | 2 | 0 |  |  |   |   |
| Contact Blocks, 3NO                     |                           |   |   |   |   |   |   |   |   | 3 | 0 |  |  |   |   |
| Contact Blocks, 1NC                     |                           |   |   |   |   |   |   |   |   | 0 | 1 |  |  |   |   |
| Contact Blocks, 2NC                     |                           |   |   |   |   |   |   |   |   | 0 | 2 |  |  |   |   |
| Contact Blocks, 3NC                     |                           |   |   |   |   |   |   |   |   | 0 | 3 |  |  |   |   |
| Contact Blocks, 1NO+1NC                 |                           |   |   |   |   |   |   |   |   | 1 | 1 |  |  |   |   |
| Contact Blocks, 2NO+1NC                 |                           |   |   |   |   |   |   |   |   | 2 | 1 |  |  |   |   |
| Contact Blocks, 1NO+2NC                 |                           |   |   |   |   |   |   |   |   | 1 | 2 |  |  |   |   |
| Contact Blocks, 1NO, Gold               |                           |   |   |   |   |   |   |   |   | 1 | 0 |  |  | G |   |
| Contact Blocks, 2NO, Gold               |                           |   |   |   |   |   |   |   |   | 2 | 0 |  |  | G |   |
| Contact Blocks, 3NO, Gold               |                           |   |   |   |   |   |   |   |   | 3 | 0 |  |  | G |   |
| Contact Blocks, 1NC, Gold               |                           |   |   |   |   |   |   |   |   | 0 | 1 |  |  | G |   |
| Contact Blocks, 2NC, Gold               |                           |   |   |   |   |   |   |   |   | 0 | 2 |  |  | G |   |
| Contact Blocks, 3NC, Gold               |                           |   |   |   |   |   |   |   |   | 0 | 3 |  |  | G |   |
| Contact Blocks, 1NO+1NC, Gold           |                           |   |   |   |   |   |   |   |   | 1 | 1 |  |  | G |   |
| Contact Blocks, 2NO+1NC, Gold           |                           |   |   |   |   |   |   |   |   | 2 | 1 |  |  | G |   |
| Contact Blocks, 1NO+2NC, Gold           |                           |   |   |   |   |   |   |   |   | 1 | 2 |  |  | G |   |
| 5 Block Holder                          |                           |   |   |   |   |   |   |   |   |   |   |  |  |   | 5 |

See catalog number explanation on page 7.70.

① No contact block in center position.

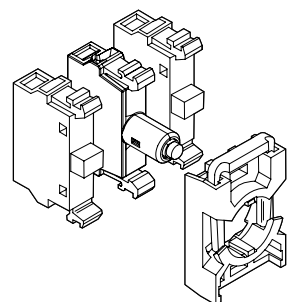
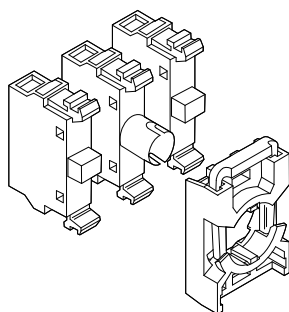
## Double pushbuttons

### Flush/extended, illuminated ①



Double pushbutton, flush/extended, illuminated

7



#### Double pushbuttons, flush/extended, illuminated ①

| Options                                  | Catalog number characters |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |  |   |
|------------------------------------------|---------------------------|---|---|---|---|---|---|---|---|---|---|--|---|---|---|---|--|---|
| Flush/extended, Green/Red                | M                         | P | D | 1 | 2 | - |   |   |   |   |   |  |   |   |   |   |  |   |
| Flush/extended, Green/Red, I/O           | M                         | P | D | 1 | 3 | - |   |   |   |   |   |  |   |   |   |   |  |   |
| Flush/extended, Green/Red, ON/OFF        | M                         | P | D | 1 | 4 | - |   |   |   |   |   |  |   |   |   |   |  |   |
| Flush/extended, Green/Red, START/STOP    | M                         | P | D | 1 | 5 | - |   |   |   |   |   |  |   |   |   |   |  |   |
| Flush/extended, White/Black              | M                         | P | D | 1 | 6 | - |   |   |   |   |   |  |   |   |   |   |  |   |
| Flush/extended, White/Black, I/O         | M                         | P | D | 1 | 7 | - |   |   |   |   |   |  |   |   |   |   |  |   |
| Flush/extended, White/Black, ON/OFF      | M                         | P | D | 1 | 8 | - |   |   |   |   |   |  |   |   |   |   |  |   |
| Flush/extended, White/Black, START/STOP  | M                         | P | D | 1 | 9 | - |   |   |   |   |   |  |   |   |   |   |  |   |
| With Holder                              |                           |   |   |   |   | - | 2 |   |   |   |   |  |   |   |   |   |  |   |
| Lamp block, MLB-1, Bulb not Included     |                           |   |   |   |   | - |   | 2 |   |   |   |  |   |   |   |   |  |   |
| Lamp block, MLB-4, Bulb not Included     |                           |   |   |   |   | - |   | 5 |   |   |   |  |   |   |   |   |  |   |
| Lamp block, MLB-5, Bulb not Included     |                           |   |   |   |   | - |   | 6 |   |   |   |  |   |   |   |   |  |   |
| Lamp block w/integrated LED ③            |                           |   |   |   |   | - |   | 7 |   |   |   |  |   |   |   |   |  |   |
| Lamp block w/zener diode, bulb not incl. |                           |   |   |   |   | - |   | 8 |   |   |   |  |   |   |   |   |  |   |
| Center Lens Color - Red                  |                           |   |   |   |   | - |   |   | R |   |   |  |   |   |   |   |  |   |
| Center Lens Color - Yellow               |                           |   |   |   |   | - |   |   | Y |   |   |  |   |   |   |   |  |   |
| Center Lens Color - Green                |                           |   |   |   |   | - |   |   | G |   |   |  |   |   |   |   |  |   |
| Center Lens Color - Clear                |                           |   |   |   |   | - |   |   | C |   |   |  |   |   |   |   |  |   |
| Contact Blocks, 1NO                      |                           |   |   |   |   | - |   |   |   | 1 | 0 |  |   |   |   |   |  |   |
| Contact Blocks, 2NO                      |                           |   |   |   |   | - |   |   |   | 2 | 0 |  |   |   |   |   |  |   |
| Contact Blocks, 3NO                      |                           |   |   |   |   | - |   |   |   | 3 | 0 |  |   |   |   |   |  |   |
| Contact Blocks, 1NC                      |                           |   |   |   |   | - |   |   |   | 0 | 1 |  |   |   |   |   |  |   |
| Contact Blocks, 2NC                      |                           |   |   |   |   | - |   |   |   | 0 | 2 |  |   |   |   |   |  |   |
| Contact Blocks, 3NC                      |                           |   |   |   |   | - |   |   |   | 0 | 3 |  |   |   |   |   |  |   |
| Contact Blocks, 1NO+1NC                  |                           |   |   |   |   | - |   |   |   | 1 | 1 |  |   |   |   |   |  |   |
| Contact Blocks, 2NO+1NC                  |                           |   |   |   |   | - |   |   |   | 2 | 1 |  |   |   |   |   |  |   |
| Contact Blocks, 1NO+2NC                  |                           |   |   |   |   | - |   |   |   | 1 | 2 |  |   |   |   |   |  |   |
| Contact Blocks, 1NO, Gold                |                           |   |   |   |   | - |   |   |   | 1 | 0 |  | G |   |   |   |  |   |
| Contact Blocks, 2NO, Gold                |                           |   |   |   |   | - |   |   |   | 2 | 0 |  | G |   |   |   |  |   |
| Contact Blocks, 3NO, Gold                |                           |   |   |   |   | - |   |   |   | 3 | 0 |  | G |   |   |   |  |   |
| Contact Blocks, 1NC, Gold                |                           |   |   |   |   | - |   |   |   | 0 | 1 |  | G |   |   |   |  |   |
| Contact Blocks, 2NC, Gold                |                           |   |   |   |   | - |   |   |   | 0 | 2 |  | G |   |   |   |  |   |
| Contact Blocks, 3NC, Gold                |                           |   |   |   |   | - |   |   |   | 0 | 3 |  | G |   |   |   |  |   |
| Contact Blocks, 1NO+1NC, Gold            |                           |   |   |   |   | - |   |   |   | 1 | 1 |  | G |   |   |   |  |   |
| Contact Blocks, 2NO+1NC, Gold            |                           |   |   |   |   | - |   |   |   | 2 | 1 |  | G |   |   |   |  |   |
| Contact Blocks, 1NO+2NC, Gold            |                           |   |   |   |   | - |   |   |   | 1 | 2 |  | G |   |   |   |  |   |
| LED 12VDC                                |                           |   |   |   |   | - |   |   |   |   |   |  |   | L | 7 |   |  |   |
| LED 24VAC/DC                             |                           |   |   |   |   | - |   |   |   |   |   |  |   | L | 8 |   |  |   |
| LED 48VAC/DC                             |                           |   |   |   |   | - |   |   |   |   |   |  |   | L | 9 |   |  |   |
| LED 60VAC/DC                             |                           |   |   |   |   | - |   |   |   |   |   |  |   | L | 6 | 0 |  |   |
| LED 110-130VAC                           |                           |   |   |   |   | - |   |   |   |   |   |  |   | L | 1 |   |  |   |
| LED 110-130VAC/DC                        |                           |   |   |   |   | - |   |   |   |   |   |  |   | L | 1 | 3 |  |   |
| LED 230V AC/DC                           |                           |   |   |   |   | - |   |   |   |   |   |  |   | L | 2 |   |  |   |
| LED 230V, AC-integrated only             |                           |   |   |   |   | - |   |   |   |   |   |  |   | L | 2 | 3 |  |   |
| LED 380V, AC-integrated only             |                           |   |   |   |   | - |   |   |   |   |   |  |   | L | 3 | 8 |  |   |
| LED 415V, AC-integrated only             |                           |   |   |   |   | - |   |   |   |   |   |  |   | L | 4 | 1 |  |   |
| Transformer Block 110-127/24VLED         |                           |   |   |   |   | - |   |   |   |   |   |  |   | T | L | 1 |  |   |
| Transformer Block 220-240/24VLED         |                           |   |   |   |   | - |   |   |   |   |   |  |   | T | L | 2 |  |   |
| Transformer Block 380-420/24VLED         |                           |   |   |   |   | - |   |   |   |   |   |  |   | T | L | 3 |  |   |
| Transformer Block 440-480/24VLED         |                           |   |   |   |   | - |   |   |   |   |   |  |   | T | L | 4 |  |   |
| 5 Block Holder                           |                           |   |   |   |   | - |   |   |   |   |   |  |   |   |   |   |  | 5 |

See catalog number explanation on page 7.70.

① No contact block in center position.

② No LED or transformer block can be combined with "illuminated without lamp block" selection.

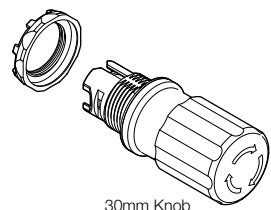
③ Includes one diode chip integrated into lamp block.

## Emergency stops & twist, pull release operators

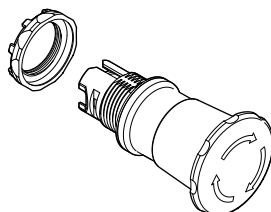
### Non-illuminated, maintained

### Fulfills IEC 60947-5-5

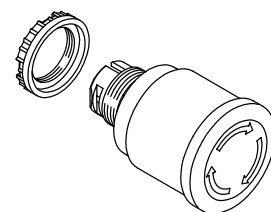
#### Emergency stops and machine stops, non-illuminated, maintained



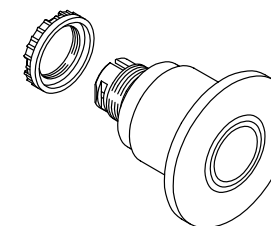
30mm Knob



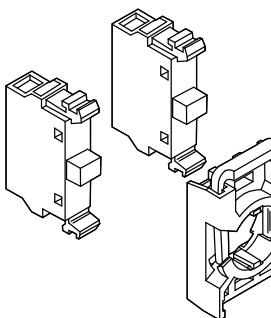
40mm Mushroom



40mm Knob



60mm Mushroom



| Options                                  | Catalog number characters |   |   |   |   |   |   |   |   |   |  |  |   |   |   |   |
|------------------------------------------|---------------------------|---|---|---|---|---|---|---|---|---|--|--|---|---|---|---|
| 30mm Knob, Twist Release                 |                           |   | M | P | E | T | 3 | - |   |   |  |  |   |   |   |   |
| 30mm Knob, Pull Release                  |                           |   | M | P | E | P | 3 | - |   |   |  |  |   |   |   |   |
| 30mm Knob, Key Release (Key Code 71)     |                           |   | M | P | E | K | 3 | - |   |   |  |  |   |   |   |   |
| 40mm Mushroom, Twist Release             |                           |   | M | P | E | T | 4 | - |   |   |  |  |   |   |   |   |
| 40mm Mushroom, Pull Release              |                           |   | M | P | E | P | 4 | - |   |   |  |  |   |   |   |   |
| 40mm Mushroom, Key Release (Key Code 71) |                           |   | M | P | E | K | 4 | - |   |   |  |  |   |   |   |   |
| 60mm, Mushroom Twist Release             |                           |   | M | P | M | T | 4 | - |   |   |  |  |   |   |   |   |
| 60mm, Mushroom Pull Release              |                           |   | M | P | M | P | 4 | - |   |   |  |  |   |   |   |   |
| With Holder, 3 block                     |                           |   |   |   |   |   |   |   | 2 | 0 |  |  |   |   |   |   |
| Red                                      |                           |   |   |   |   |   |   |   |   |   |  |  | R |   |   |   |
| Contact Blocks, 1NO                      |                           |   |   |   |   |   |   |   |   |   |  |  |   | 1 | 0 |   |
| Contact Blocks, 2NO                      |                           |   |   |   |   |   |   |   |   |   |  |  |   | 2 | 0 |   |
| Contact Blocks, 3NO                      |                           |   |   |   |   |   |   |   |   |   |  |  |   | 3 | 0 |   |
| Contact Blocks, 1NC                      |                           |   |   |   |   |   |   |   |   |   |  |  |   | 0 | 1 |   |
| Contact Blocks, 2NC                      |                           |   |   |   |   |   |   |   |   |   |  |  |   | 0 | 2 |   |
| Contact Blocks, 3NC                      |                           |   |   |   |   |   |   |   |   |   |  |  |   | 0 | 3 |   |
| Contact Blocks, 1NO+1NC                  |                           |   |   |   |   |   |   |   |   |   |  |  |   | 1 | 1 |   |
| Contact Blocks, 2NO+1NC                  |                           |   |   |   |   |   |   |   |   |   |  |  |   | 2 | 1 |   |
| Contact Blocks, 1NO+2NC                  |                           |   |   |   |   |   |   |   |   |   |  |  |   | 1 | 2 |   |
| Contact Blocks, 1NO, Gold                |                           |   |   |   |   |   |   |   |   |   |  |  |   | 1 | 0 | G |
| Contact Blocks, 2NO, Gold                |                           |   |   |   |   |   |   |   |   |   |  |  |   | 2 | 0 | G |
| Contact Blocks, 3NO, Gold                |                           |   |   |   |   |   |   |   |   |   |  |  |   | 3 | 0 | G |
| Contact Blocks, 1NC, Gold                |                           |   |   |   |   |   |   |   |   |   |  |  |   | 0 | 1 | G |
| Contact Blocks, 2NC, Gold                |                           |   |   |   |   |   |   |   |   |   |  |  |   | 0 | 2 | G |
| Contact Blocks, 3NC, Gold                |                           |   |   |   |   |   |   |   |   |   |  |  |   | 0 | 3 | G |
| Contact Blocks, 1NO+1NC, Gold            |                           |   |   |   |   |   |   |   |   |   |  |  |   | 1 | 1 | G |
| Contact Blocks, 2NO+1NC, Gold            |                           |   |   |   |   |   |   |   |   |   |  |  |   | 2 | 1 | G |
| Contact Blocks, 1NO+2NC, Gold            |                           |   |   |   |   |   |   |   |   |   |  |  |   | 1 | 2 | G |
| 5 Block Holder                           |                           |   |   |   |   |   |   |   |   |   |  |  |   |   |   | 5 |
| 30mm Black Plastic Adaptor Ring          | G                         | 1 |   |   |   |   |   |   |   |   |  |  |   |   |   |   |
| 30mm Chrome Metal Adaptor Ring           | G                         | 2 |   |   |   |   |   |   |   |   |  |  |   |   |   |   |

See catalog number explanation on page 7.70.

#### NOTE:

1. If used as an emergency stop, device must have a yellow background.
2. E-stop requires twist to release only.

To comply with the standard, IEC 60947-5-5, a number of tests have to be conducted:

|                        |                                                                                                                |                                                 |                                             |
|------------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------|---------------------------------------------|
| <b>Durability test</b> | 6,0505 cycles. This is not a test of mechanical life. The product has a mechanical life of 100,000 operations. | <b>Latching test</b>                            | Impulse voltage test at 2,500 V             |
| <b>Robustness</b>      | The force 113 N applied in three axes.                                                                         | <b>Resetting test</b>                           | Pulling force < 50 N<br>Turning torque < Nm |
| <b>Conditioning</b>    | Heat and cold, moist atmosphere, and in 5% NaC                                                                 | <b>Shock</b>                                    | 15 g shock                                  |
|                        |                                                                                                                | <b>Vibration</b>                                | 2 h at 50 m/s <sup>2</sup>                  |
|                        |                                                                                                                | <b>Contacts with positive opening operation</b> | 15 g shock                                  |

## Emergency stops & twist, pull release operators

Illuminated, maintained ①

Fulfills IEC 60947-5-5

### Emergency stops and machine stops, illuminated ①

| Options                                     |   |   |   |   | Catalog number characters |   |   |   |   |   |   |  |   |   |   |   |  |  |   |
|---------------------------------------------|---|---|---|---|---------------------------|---|---|---|---|---|---|--|---|---|---|---|--|--|---|
| 40mm, Knob Twist Release                    |   | M | P | M | T                         | 3 | - |   |   |   |   |  |   |   |   |   |  |  |   |
| 60mm, Mushroom Twist Release                |   | M | P | M | T                         | 4 | - |   |   |   |   |  |   |   |   |   |  |  |   |
| 60mm, Mushroom Pull Release                 |   | M | P | M | P                         | 4 | - |   |   |   |   |  |   |   |   |   |  |  |   |
| With Holder                                 |   |   |   |   |                           |   |   | 2 |   |   |   |  |   |   |   |   |  |  |   |
| Lamp block, MLB-1, Bulb not Included        |   |   |   |   |                           |   |   | 2 |   |   |   |  |   |   |   |   |  |  |   |
| Lamp block, MLB-4, Bulb not Included        |   |   |   |   |                           |   |   | 5 |   |   |   |  |   |   |   |   |  |  |   |
| Lamp block, MLB-5, Bulb not Included        |   |   |   |   |                           |   |   | 6 |   |   |   |  |   |   |   |   |  |  |   |
| Lamp block w/integrated LED ③               |   |   |   |   |                           |   |   | 7 |   |   |   |  |   |   |   |   |  |  |   |
| Lamp block with zener diode, bulb not incl. |   |   |   |   |                           |   |   | 8 |   |   |   |  |   |   |   |   |  |  |   |
| Button Color - Red                          |   |   |   |   |                           |   |   |   | R |   |   |  |   |   |   |   |  |  |   |
| Contact Blocks, 1NO                         |   |   |   |   |                           |   |   |   |   | 1 | 0 |  |   |   |   |   |  |  |   |
| Contact Blocks, 2NO                         |   |   |   |   |                           |   |   |   |   | 2 | 0 |  |   |   |   |   |  |  |   |
| Contact Blocks, 3NO                         |   |   |   |   |                           |   |   |   |   | 3 | 0 |  |   |   |   |   |  |  |   |
| Contact Blocks, 1NC                         |   |   |   |   |                           |   |   |   |   | 0 | 1 |  |   |   |   |   |  |  |   |
| Contact Blocks, 2NC                         |   |   |   |   |                           |   |   |   |   | 0 | 2 |  |   |   |   |   |  |  |   |
| Contact Blocks, 3NC                         |   |   |   |   |                           |   |   |   |   | 0 | 3 |  |   |   |   |   |  |  |   |
| Contact Blocks, 1NO+1NC                     |   |   |   |   |                           |   |   |   |   | 1 | 1 |  |   |   |   |   |  |  |   |
| Contact Blocks, 2NO+1NC                     |   |   |   |   |                           |   |   |   |   | 2 | 1 |  |   |   |   |   |  |  |   |
| Contact Blocks, 1NO+2NC                     |   |   |   |   |                           |   |   |   |   | 1 | 2 |  |   |   |   |   |  |  |   |
| Contact Blocks, 1NO, Gold                   |   |   |   |   |                           |   |   |   |   | 1 | 0 |  | G |   |   |   |  |  |   |
| Contact Blocks, 2NO, Gold                   |   |   |   |   |                           |   |   |   |   | 2 | 0 |  | G |   |   |   |  |  |   |
| Contact Blocks, 3NO, Gold                   |   |   |   |   |                           |   |   |   |   | 3 | 0 |  | G |   |   |   |  |  |   |
| Contact Blocks, 1NC, Gold                   |   |   |   |   |                           |   |   |   |   | 0 | 1 |  | G |   |   |   |  |  |   |
| Contact Blocks, 2NC, Gold                   |   |   |   |   |                           |   |   |   |   | 0 | 2 |  | G |   |   |   |  |  |   |
| Contact Blocks, 3NC, Gold                   |   |   |   |   |                           |   |   |   |   | 0 | 3 |  | G |   |   |   |  |  |   |
| Contact Blocks, 1NO+1NC, Gold               |   |   |   |   |                           |   |   |   |   | 1 | 1 |  | G |   |   |   |  |  |   |
| Contact Blocks, 2NO+1NC, Gold               |   |   |   |   |                           |   |   |   |   | 2 | 1 |  | G |   |   |   |  |  |   |
| Contact Blocks, 1NO+2NC, Gold               |   |   |   |   |                           |   |   |   |   | 1 | 2 |  | G |   |   |   |  |  |   |
| LED 12VDC                                   |   |   |   |   |                           |   |   |   |   |   |   |  |   | L | 7 |   |  |  |   |
| LED 24VAC/DC                                |   |   |   |   |                           |   |   |   |   |   |   |  |   | L | 8 |   |  |  |   |
| LED 48VAC/DC                                |   |   |   |   |                           |   |   |   |   |   |   |  |   | L | 9 |   |  |  |   |
| LED 60VAC/DC                                |   |   |   |   |                           |   |   |   |   |   |   |  |   | L | 6 | 0 |  |  |   |
| LED 110-130VAC                              |   |   |   |   |                           |   |   |   |   |   |   |  |   | L | 1 |   |  |  |   |
| LED 110-130VAC/DC                           |   |   |   |   |                           |   |   |   |   |   |   |  |   | L | 1 | 3 |  |  |   |
| LED 230V AC/DC                              |   |   |   |   |                           |   |   |   |   |   |   |  |   | L | 2 |   |  |  |   |
| LED 230V, AC-integrated only                |   |   |   |   |                           |   |   |   |   |   |   |  |   | L | 2 | 3 |  |  |   |
| LED 380V, AC-integrated only                |   |   |   |   |                           |   |   |   |   |   |   |  |   | L | 3 | 8 |  |  |   |
| LED 415V, AC-integrated only                |   |   |   |   |                           |   |   |   |   |   |   |  |   | L | 4 | 1 |  |  |   |
| Transformer Block 110-127/24VLED            |   |   |   |   |                           |   |   |   |   |   |   |  |   | T | L | 1 |  |  |   |
| Transformer Block 220-240/24VLED            |   |   |   |   |                           |   |   |   |   |   |   |  |   | T | L | 2 |  |  |   |
| Transformer Block 380-420/24VLED            |   |   |   |   |                           |   |   |   |   |   |   |  |   | T | L | 3 |  |  |   |
| Transformer Block 440-480/24VLED            |   |   |   |   |                           |   |   |   |   |   |   |  |   | T | L | 4 |  |  |   |
| 5 Block Holder                              |   |   |   |   |                           |   |   |   |   |   |   |  |   |   |   |   |  |  | 5 |
| 30mm Black Plastic Adaptor Ring             | G |   | 1 |   |                           |   |   |   |   |   |   |  |   |   |   |   |  |  |   |
| 30mm Chrome Metal Adaptor Ring              | G |   | 2 |   |                           |   |   |   |   |   |   |  |   |   |   |   |  |  |   |

See catalog number explanation on page 7.70.

#### NOTE:

1. If used as an emergency stop, device must have a yellow background.
2. E-stop requires twist to release only.

To comply with the standard, IEC 60947-5-5, a number of tests have to be conducted.

See page 7.49.

① No contact block in center position.

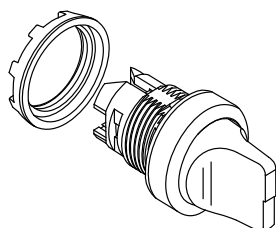
② No filament bulb, LED or transformer block can be combined with "illuminated without lamp block" selection.

③ Includes one diode chip integrated into lamp block.

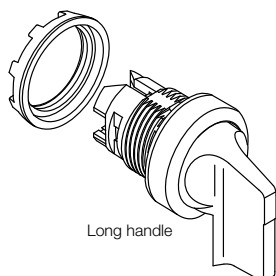
## Selector switches, two position

### Non-illuminated ①

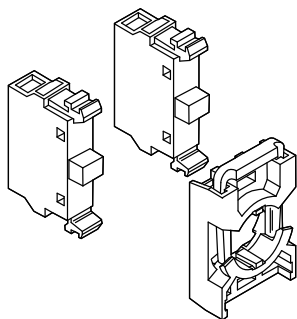
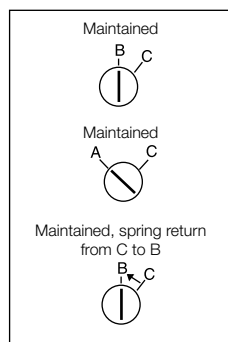
#### Selector switches, 2 position, non-illuminated ①



Short handle



Long handle



| Options                           | Catalog number characters |   |   |   |   |   |   |   |   |   |   |   |   |   |
|-----------------------------------|---------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Short/Main B&C                    |                           |   | M | 2 | S | S | 1 | - |   |   |   |   |   |   |
| Short/Main A&C                    |                           |   | M | 2 | S | S | 2 | - |   |   |   |   |   |   |
| Short/Spring Return C to B        |                           |   | M | 2 | S | S | 3 | - |   |   |   |   |   |   |
| Long/Main B&C                     |                           |   | M | 2 | S | S | 4 | - |   |   |   |   |   |   |
| Long/Main A&C                     |                           |   | M | 2 | S | S | 5 | - |   |   |   |   |   |   |
| Long/Spring Return C to B         |                           |   | M | 2 | S | S | 6 | - |   |   |   |   |   |   |
| Bezel, Black Plastic, with Holder |                           |   |   |   |   |   |   |   | 4 | 0 |   |   |   |   |
| Bezel, Chrome Metal, with Holder  |                           |   |   |   |   |   |   |   | 6 | 0 |   |   |   |   |
| Switch Color - Red                |                           |   |   |   |   |   |   |   |   |   | R |   |   |   |
| Switch Color - Black              |                           |   |   |   |   |   |   |   |   |   | B |   |   |   |
| Switch Color - Grey               |                           |   |   |   |   |   |   |   |   |   | U |   |   |   |
| Contact Blocks, 1NO               |                           |   |   |   |   |   |   |   |   |   |   | 1 | 0 |   |
| Contact Blocks, 2NO               |                           |   |   |   |   |   |   |   |   |   |   | 2 | 0 |   |
| Contact Blocks, 3NO               |                           |   |   |   |   |   |   |   |   |   |   | 3 | 0 |   |
| Contact Blocks, 1NC               |                           |   |   |   |   |   |   |   |   |   |   | 0 | 1 |   |
| Contact Blocks, 2NC               |                           |   |   |   |   |   |   |   |   |   |   | 0 | 2 |   |
| Contact Blocks, 3NC               |                           |   |   |   |   |   |   |   |   |   |   | 0 | 3 |   |
| Contact Blocks, 1NO+1NC           |                           |   |   |   |   |   |   |   |   |   |   | 1 | 1 |   |
| Contact Blocks, 2NO+1NC           |                           |   |   |   |   |   |   |   |   |   |   | 2 | 1 |   |
| Contact Blocks, 1NO+2NC           |                           |   |   |   |   |   |   |   |   |   |   | 1 | 2 |   |
| Contact Blocks, 1NO, Gold         |                           |   |   |   |   |   |   |   |   |   |   | 1 | 0 | G |
| Contact Blocks, 2NO, Gold         |                           |   |   |   |   |   |   |   |   |   |   | 2 | 0 | G |
| Contact Blocks, 3NO, Gold         |                           |   |   |   |   |   |   |   |   |   |   | 3 | 0 | G |
| Contact Blocks, 1NC, Gold         |                           |   |   |   |   |   |   |   |   |   |   | 0 | 1 | G |
| Contact Blocks, 2NC, Gold         |                           |   |   |   |   |   |   |   |   |   |   | 0 | 2 | G |
| Contact Blocks, 3NC, Gold         |                           |   |   |   |   |   |   |   |   |   |   | 0 | 3 | G |
| Contact Blocks, 1NO+1NC, Gold     |                           |   |   |   |   |   |   |   |   |   |   | 1 | 1 | G |
| Contact Blocks, 2NO+1NC, Gold     |                           |   |   |   |   |   |   |   |   |   |   | 2 | 1 | G |
| Contact Blocks, 1NO+2NC, Gold     |                           |   |   |   |   |   |   |   |   |   |   | 1 | 2 | G |
| 5 Block Holder                    |                           |   |   |   |   |   |   |   |   |   |   |   |   | 5 |
| 30mm Black Plastic Adaptor Ring   | G                         | 1 |   |   |   |   |   |   |   |   |   |   |   |   |
| 30mm Chrome Metal Adaptor Ring    | G                         | 2 |   |   |   |   |   |   |   |   |   |   |   |   |

See catalog number explanation on page 7.70.

#### Contact functions

Block positions as seen from operator front.

| Handle position | Left block | Right block |
|-----------------|------------|-------------|
| A or (B)        | O          | O           |
| C               | X          | X           |

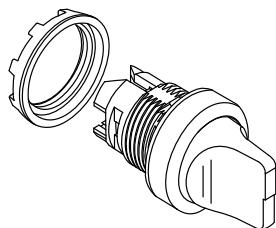
O = not actuated (normal state)  
X = actuated (changed state)

① No contact block in center position.

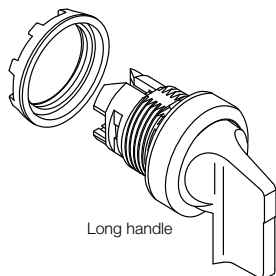


## Selector switches, two position Illuminated ①

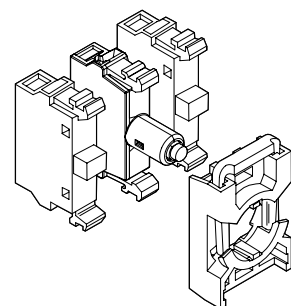
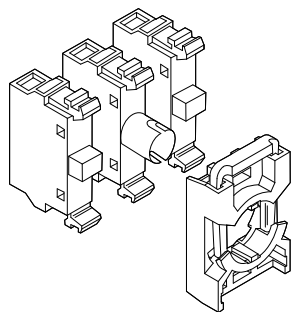
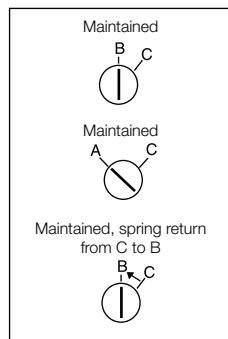
### Selector switches, 2 position, illuminated ①



Short handle



Long handle



| Options                                  |   |   |   | Catalog number characters |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|------------------------------------------|---|---|---|---------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Short/Main B&C                           | M | 2 | S | S                         | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Short/Main A&C                           | M | 2 | S | S                         | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Short/Spring Return C to B               | M | 2 | S | S                         | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Long/Main B&C                            | M | 2 | S | S                         | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Long/Main A&C                            | M | 2 | S | S                         | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Long/Spring Return C to B                | M | 2 | S | S                         | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Bezel, Black Plastic, with Holder        | - | - | - | -                         | - | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Bezel, Chrome Metal, with Holder         | - | - | - | -                         | - | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - |
| Lamp block, MLB-1, Bulb not Included     | - | - | - | -                         | - | - | - | 2 | - | - | - | - | - | - | - | - | - | - | - |
| Lamp block, MLB-4, Bulb not Included     | - | - | - | -                         | - | - | - | 5 | - | - | - | - | - | - | - | - | - | - | - |
| Lamp block, MLB-5, Bulb not Included     | - | - | - | -                         | - | - | - | 6 | - | - | - | - | - | - | - | - | - | - | - |
| Lamp block w/integrated LED ③            | - | - | - | -                         | - | - | - | 7 | - | - | - | - | - | - | - | - | - | - | - |
| Lamp block w/zener diode, Bulb not incl. | - | - | - | -                         | - | - | - | 8 | - | - | - | - | - | - | - | - | - | - | - |
| Switch Color - Red                       | - | - | - | -                         | - | - | - | - | R | - | - | - | - | - | - | - | - | - | - |
| Switch Color - Green                     | - | - | - | -                         | - | - | - | - | G | - | - | - | - | - | - | - | - | - | - |
| Switch Color - Yellow                    | - | - | - | -                         | - | - | - | - | Y | - | - | - | - | - | - | - | - | - | - |
| Switch Color - Blue                      | - | - | - | -                         | - | - | - | - | B | - | - | - | - | - | - | - | - | - | - |
| Switch Color - Clear                     | - | - | - | -                         | - | - | - | - | L | - | - | - | - | - | - | - | - | - | - |
| Contact Blocks, 1NO                      | - | - | - | -                         | - | - | - | - | - | 1 | 0 | - | - | - | - | - | - | - | - |
| Contact Blocks, 2NO                      | - | - | - | -                         | - | - | - | - | - | 2 | 0 | - | - | - | - | - | - | - | - |
| Contact Blocks, 3NO                      | - | - | - | -                         | - | - | - | - | - | 3 | 0 | - | - | - | - | - | - | - | - |
| Contact Blocks, 1NC                      | - | - | - | -                         | - | - | - | - | - | 0 | 1 | - | - | - | - | - | - | - | - |
| Contact Blocks, 2NC                      | - | - | - | -                         | - | - | - | - | - | 0 | 2 | - | - | - | - | - | - | - | - |
| Contact Blocks, 3NC                      | - | - | - | -                         | - | - | - | - | - | 0 | 3 | - | - | - | - | - | - | - | - |
| Contact Blocks, 1NO+1NC                  | - | - | - | -                         | - | - | - | - | - | 1 | 1 | - | - | - | - | - | - | - | - |
| Contact Blocks, 2NO+1NC                  | - | - | - | -                         | - | - | - | - | - | 2 | 1 | - | - | - | - | - | - | - | - |
| Contact Blocks, 1NO+2NC                  | - | - | - | -                         | - | - | - | - | - | 1 | 2 | - | - | - | - | - | - | - | - |
| Contact Blocks, 1NO, Gold                | - | - | - | -                         | - | - | - | - | - | 1 | 0 | G | - | - | - | - | - | - | - |
| Contact Blocks, 2NO, Gold                | - | - | - | -                         | - | - | - | - | - | 2 | 0 | G | - | - | - | - | - | - | - |
| Contact Blocks, 3NO, Gold                | - | - | - | -                         | - | - | - | - | - | 3 | 0 | G | - | - | - | - | - | - | - |
| Contact Blocks, 1NC, Gold                | - | - | - | -                         | - | - | - | - | - | 0 | 1 | G | - | - | - | - | - | - | - |
| Contact Blocks, 2NC, Gold                | - | - | - | -                         | - | - | - | - | - | 0 | 2 | G | - | - | - | - | - | - | - |
| Contact Blocks, 3NC, Gold                | - | - | - | -                         | - | - | - | - | - | 0 | 3 | G | - | - | - | - | - | - | - |
| Contact Blocks, 1NO+1NC, Gold            | - | - | - | -                         | - | - | - | - | - | 1 | 1 | G | - | - | - | - | - | - | - |
| Contact Blocks, 2NO+1NC, Gold            | - | - | - | -                         | - | - | - | - | - | 2 | 1 | G | - | - | - | - | - | - | - |
| Contact Blocks, 1NO+2NC, Gold            | - | - | - | -                         | - | - | - | - | - | 1 | 2 | G | - | - | - | - | - | - | - |
| LED 12VDC                                | - | - | - | -                         | - | - | - | - | - | - | - | - | L | 7 | - | - | - | - | - |
| LED 24VAC/DC                             | - | - | - | -                         | - | - | - | - | - | - | - | - | L | 8 | - | - | - | - | - |
| LED 48VAC/DC                             | - | - | - | -                         | - | - | - | - | - | - | - | - | L | 9 | - | - | - | - | - |
| LED 60VAC/DC                             | - | - | - | -                         | - | - | - | - | - | - | - | - | L | 6 | 0 | - | - | - | - |
| LED 110-130VAC                           | - | - | - | -                         | - | - | - | - | - | - | - | - | L | 1 | - | - | - | - | - |
| LED 110-130VAC/DC                        | - | - | - | -                         | - | - | - | - | - | - | - | - | L | 1 | 3 | - | - | - | - |
| LED 230V AC/DC                           | - | - | - | -                         | - | - | - | - | - | - | - | - | L | 2 | - | - | - | - | - |
| LED 230V, AC-integrated only             | - | - | - | -                         | - | - | - | - | - | - | - | - | L | 2 | 3 | - | - | - | - |
| LED 380V, AC-integrated only             | - | - | - | -                         | - | - | - | - | - | - | - | - | L | 3 | 8 | - | - | - | - |
| LED 415V, AC-integrated only             | - | - | - | -                         | - | - | - | - | - | - | - | - | L | 4 | 1 | - | - | - | - |
| Transformer Block 110-127/24VLED         | - | - | - | -                         | - | - | - | - | - | - | - | - | T | L | 1 | - | - | - | - |
| Transformer Block 220-240/24VLED         | - | - | - | -                         | - | - | - | - | - | - | - | - | T | L | 2 | - | - | - | - |
| Transformer Block 380-420/24VLED         | - | - | - | -                         | - | - | - | - | - | - | - | - | T | L | 3 | - | - | - | - |
| Transformer Block 440-480/24VLED         | - | - | - | -                         | - | - | - | - | - | - | - | - | T | L | 4 | - | - | - | - |
| 5 Block Holder                           | - | - | - | -                         | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 5 |
| 30mm Black Plastic Adaptor Ring ③        | G | 1 | - | -                         | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 30mm Chrome Metal Adaptor Ring ③         | G | 2 | - | -                         | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

See catalog number explanation on page 7.70.

### Contact functions

Block positions as seen  
from operator front.

| Handle position | Left block | Right block |
|-----------------|------------|-------------|
| A or (B)        | O          | O           |
| C               | X          | X           |

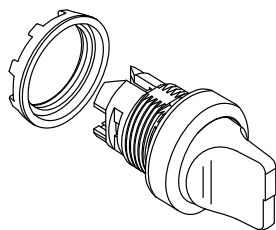
O = not actuated (normal state)  
X = actuated (changed state)

① No contact block in center position.  
② No LED or transformer block can be combined with "Illuminated without lamp block" selection.  
③ Includes one diode chip integrated into lamp block.

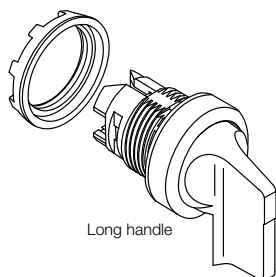


## Selector switches, two position

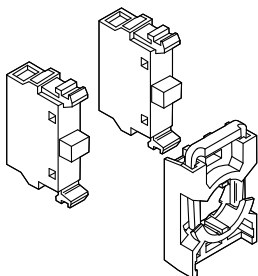
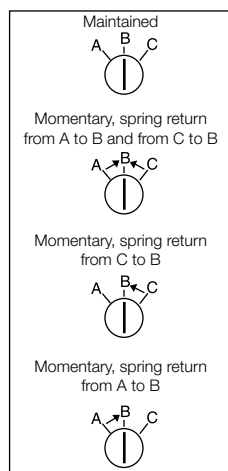
### Non-Illuminated ①



Short handle



Long handle

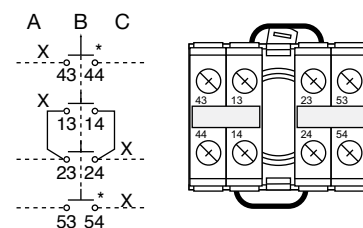


#### Selector switches, 2 position, non-illuminated ①

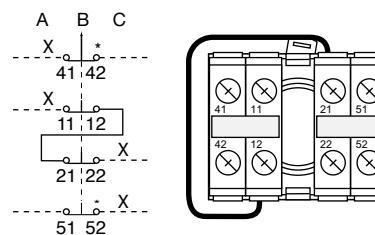
| Options                             | Catalog number characters |   |   |   |   |   |   |   |   |   |   |  |   |  |  |   |
|-------------------------------------|---------------------------|---|---|---|---|---|---|---|---|---|---|--|---|--|--|---|
| Short/3-Main                        | M                         | 3 | S | S | 1 | - |   |   |   |   |   |  |   |  |  |   |
| Short/Spring Return to B            | M                         | 3 | S | S | 2 | - |   |   |   |   |   |  |   |  |  |   |
| Short/Main A&B/Spring Return C to B | M                         | 3 | S | S | 3 | - |   |   |   |   |   |  |   |  |  |   |
| Long/3-Main                         | M                         | 3 | S | S | 4 | - |   |   |   |   |   |  |   |  |  |   |
| Long/Spring Return to B             | M                         | 3 | S | S | 5 | - |   |   |   |   |   |  |   |  |  |   |
| Long/Main A&B/Spring Return C to B  | M                         | 3 | S | S | 6 | - |   |   |   |   |   |  |   |  |  |   |
| Short/Main B&C/Spring Return A to B | M                         | 3 | S | S | 7 | - |   |   |   |   |   |  |   |  |  |   |
| Long/Main B&C/Spring Return A to B  | M                         | 3 | S | S | 8 | - |   |   |   |   |   |  |   |  |  |   |
| Bezel, Black Plastic, with Holder   |                           |   |   |   |   |   | 4 | 0 |   |   |   |  |   |  |  |   |
| Bezel, Chrome Metal, with Holder    |                           |   |   |   |   |   | 6 | 0 |   |   |   |  |   |  |  |   |
| Switch Color - Red                  |                           |   |   |   |   |   |   |   | R |   |   |  |   |  |  |   |
| Switch Color - Black                |                           |   |   |   |   |   |   |   | B |   |   |  |   |  |  |   |
| Switch Color - Grey                 |                           |   |   |   |   |   |   |   | U |   |   |  |   |  |  |   |
| Contact Blocks, 1NO                 |                           |   |   |   |   |   |   |   |   | 1 | 0 |  |   |  |  |   |
| Contact Blocks, 2NO                 |                           |   |   |   |   |   |   |   |   | 2 | 0 |  |   |  |  |   |
| Contact Blocks, 3NO                 |                           |   |   |   |   |   |   |   |   | 3 | 0 |  |   |  |  |   |
| Contact Blocks, 1NC                 |                           |   |   |   |   |   |   |   |   | 0 | 1 |  |   |  |  |   |
| Contact Blocks, 2NC                 |                           |   |   |   |   |   |   |   |   | 0 | 2 |  |   |  |  |   |
| Contact Blocks, 3NC                 |                           |   |   |   |   |   |   |   |   | 0 | 3 |  |   |  |  |   |
| Contact Blocks, 1NO+1NC             |                           |   |   |   |   |   |   |   |   | 1 | 1 |  |   |  |  |   |
| Contact Blocks, 2NO+1NC             |                           |   |   |   |   |   |   |   |   | 2 | 1 |  |   |  |  |   |
| Contact Blocks, 1NO+2NC             |                           |   |   |   |   |   |   |   |   | 1 | 2 |  |   |  |  |   |
| Contact Blocks, 1NO, Gold           |                           |   |   |   |   |   |   |   |   | 1 | 0 |  | G |  |  |   |
| Contact Blocks, 2NO, Gold           |                           |   |   |   |   |   |   |   |   | 2 | 0 |  | G |  |  |   |
| Contact Blocks, 3NO, Gold           |                           |   |   |   |   |   |   |   |   | 3 | 0 |  | G |  |  |   |
| Contact Blocks, 1NC, Gold           |                           |   |   |   |   |   |   |   |   | 0 | 1 |  | G |  |  |   |
| Contact Blocks, 2NC, Gold           |                           |   |   |   |   |   |   |   |   | 0 | 2 |  | G |  |  |   |
| Contact Blocks, 3NC, Gold           |                           |   |   |   |   |   |   |   |   | 0 | 3 |  | G |  |  |   |
| Contact Blocks, 1NO+1NC, Gold       |                           |   |   |   |   |   |   |   |   | 1 | 1 |  | G |  |  |   |
| Contact Blocks, 2NO+1NC, Gold       |                           |   |   |   |   |   |   |   |   | 2 | 1 |  | G |  |  |   |
| Contact Blocks, 1NO+2NC, Gold       |                           |   |   |   |   |   |   |   |   | 1 | 2 |  | G |  |  |   |
| 5 Block Holder                      |                           |   |   |   |   |   |   |   |   |   |   |  |   |  |  | 5 |
| 30mm Black Plastic Adaptor Ring     | G                         | 1 |   |   |   |   |   |   |   |   |   |  |   |  |  |   |
| 30mm Chrome Metal Adaptor Ring      | G                         | 2 |   |   |   |   |   |   |   |   |   |  |   |  |  |   |

See catalog number explanation on page 7.70.

#### Center position connection detail



\* Contacts may be N.O. or N.C.



\* Contacts may be N.O. or N.C.

#### Contact functions

Block positions as seen from operator front.

| Handle position | Left block | Right block |
|-----------------|------------|-------------|
| A               | X          | O           |
| B               | O          | O           |
| C               | O          | X           |

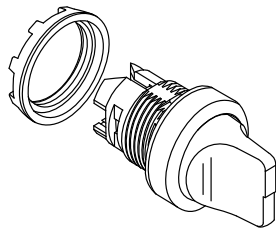
O = not actuated (normal state)

X = actuated (changed state)

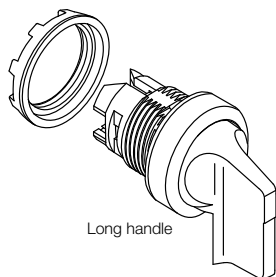
① No contact block in center position.

## Selector switches, three position Illuminated ①

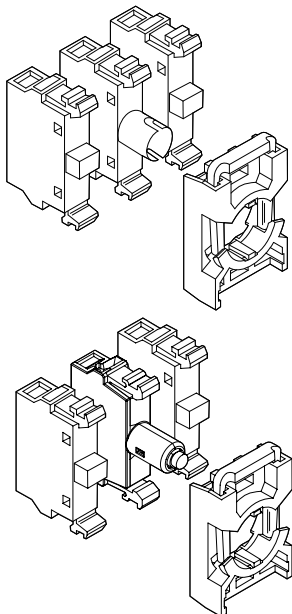
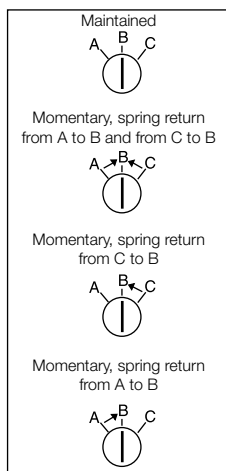
### Selector switches, 3 position, illuminated ①



Short handle



Long handle



| Options                                     |   |   |   | Catalog number characters |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---------------------------------------------|---|---|---|---------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Short/3-Main                                | M | 3 | S | S                         | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Short/Spring Return to B                    | M | 3 | S | S                         | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Short/Main A&B/Spring Return C to B         | M | 3 | S | S                         | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Long/3-Main                                 | M | 3 | S | S                         | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Long/Spring Return to B                     | M | 3 | S | S                         | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Long/Main A&B/Spring Return C to B          | M | 3 | S | S                         | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Short/Main B&C/Spring Return A to B         | M | 3 | S | S                         | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Long/Main B&C/Spring Return A to B          | M | 3 | S | S                         | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Bezel, Black Plastic, with Holder           | - | - | - | -                         | - | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Bezel, Chrome Metal, with Holder            | - | - | - | -                         | - | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - |
| Lamp block, MLB-1, Bulb not Included        | - | - | - | -                         | - | - | - | 2 | - | - | - | - | - | - | - | - | - | - | - |
| Lamp block, MLB-4, Bulb not Included        | - | - | - | -                         | - | - | - | 5 | - | - | - | - | - | - | - | - | - | - | - |
| Lamp block, MLB-5, Bulb not Included        | - | - | - | -                         | - | - | - | 6 | - | - | - | - | - | - | - | - | - | - | - |
| Lamp block w/integrated LED ③               | - | - | - | -                         | - | - | - | 7 | - | - | - | - | - | - | - | - | - | - | - |
| Lamp block with zener diode, bulb not incl. | - | - | - | -                         | - | - | - | 8 | - | - | - | - | - | - | - | - | - | - | - |
| Switch Color - Red                          | - | - | - | -                         | - | - | - | - | R | - | - | - | - | - | - | - | - | - | - |
| Switch Color - Green                        | - | - | - | -                         | - | - | - | - | G | - | - | - | - | - | - | - | - | - | - |
| Switch Color - Yellow                       | - | - | - | -                         | - | - | - | - | Y | - | - | - | - | - | - | - | - | - | - |
| Switch Color - Blue                         | - | - | - | -                         | - | - | - | - | B | - | - | - | - | - | - | - | - | - | - |
| Switch Color - Clear                        | - | - | - | -                         | - | - | - | - | L | - | - | - | - | - | - | - | - | - | - |
| Contact Blocks, 1NO                         | - | - | - | -                         | - | - | - | - | - | 1 | 0 | - | - | - | - | - | - | - | - |
| Contact Blocks, 2NO                         | - | - | - | -                         | - | - | - | - | - | 2 | 0 | - | - | - | - | - | - | - | - |
| Contact Blocks, 3NO                         | - | - | - | -                         | - | - | - | - | - | 3 | 0 | - | - | - | - | - | - | - | - |
| Contact Blocks, 1NC                         | - | - | - | -                         | - | - | - | - | - | 0 | 1 | - | - | - | - | - | - | - | - |
| Contact Blocks, 2NC                         | - | - | - | -                         | - | - | - | - | - | 0 | 2 | - | - | - | - | - | - | - | - |
| Contact Blocks, 3NC                         | - | - | - | -                         | - | - | - | - | - | 0 | 3 | - | - | - | - | - | - | - | - |
| Contact Blocks, 1NO+1NC                     | - | - | - | -                         | - | - | - | - | - | 1 | 1 | - | - | - | - | - | - | - | - |
| Contact Blocks, 2NO+1NC                     | - | - | - | -                         | - | - | - | - | - | 2 | 1 | - | - | - | - | - | - | - | - |
| Contact Blocks, 1NO+2NC                     | - | - | - | -                         | - | - | - | - | - | 1 | 2 | - | - | - | - | - | - | - | - |
| Contact Blocks, 1NO, Gold                   | - | - | - | -                         | - | - | - | - | - | 1 | 0 | G | - | - | - | - | - | - | - |
| Contact Blocks, 2NO, Gold                   | - | - | - | -                         | - | - | - | - | - | 2 | 0 | G | G | - | - | - | - | - | - |
| Contact Blocks, 3NO, Gold                   | - | - | - | -                         | - | - | - | - | - | 3 | 0 | G | G | - | - | - | - | - | - |
| Contact Blocks, 1NC, Gold                   | - | - | - | -                         | - | - | - | - | - | 0 | 1 | G | G | - | - | - | - | - | - |
| Contact Blocks, 2NC, Gold                   | - | - | - | -                         | - | - | - | - | - | 0 | 2 | G | G | - | - | - | - | - | - |
| Contact Blocks, 3NC, Gold                   | - | - | - | -                         | - | - | - | - | - | 0 | 3 | G | G | - | - | - | - | - | - |
| Contact Blocks, 1NO+1NC, Gold               | - | - | - | -                         | - | - | - | - | - | 1 | 1 | G | G | - | - | - | - | - | - |
| Contact Blocks, 2NO+1NC, Gold               | - | - | - | -                         | - | - | - | - | - | 2 | 1 | G | G | - | - | - | - | - | - |
| Contact Blocks, 1NO+2NC, Gold               | - | - | - | -                         | - | - | - | - | - | 1 | 2 | G | G | - | - | - | - | - | - |
| LED 12VDC                                   | - | - | - | -                         | - | - | - | - | - | - | - | - | L | 7 | - | - | - | - | - |
| LED 24VAC/DC                                | - | - | - | -                         | - | - | - | - | - | - | - | - | L | 8 | - | - | - | - | - |
| LED 48VAC/DC                                | - | - | - | -                         | - | - | - | - | - | - | - | - | L | 9 | - | - | - | - | - |
| LED 60VAC/DC                                | - | - | - | -                         | - | - | - | - | - | - | - | - | L | 6 | 0 | - | - | - | - |
| LED 110-130VAC                              | - | - | - | -                         | - | - | - | - | - | - | - | - | L | 1 | - | - | - | - | - |
| LED 110-130VAC/DC                           | - | - | - | -                         | - | - | - | - | - | - | - | - | L | 1 | 3 | - | - | - | - |
| LED 230V AC/DC                              | - | - | - | -                         | - | - | - | - | - | - | - | - | L | 2 | - | - | - | - | - |
| LED 230V, AC-integrated only                | - | - | - | -                         | - | - | - | - | - | - | - | - | L | 2 | 3 | - | - | - | - |
| LED 380V, AC-integrated only                | - | - | - | -                         | - | - | - | - | - | - | - | - | L | 3 | 8 | - | - | - | - |
| LED 415V, AC-integrated only                | - | - | - | -                         | - | - | - | - | - | - | - | - | L | 4 | 1 | - | - | - | - |
| Transformer Block 110-127/24VLED            | - | - | - | -                         | - | - | - | - | - | - | - | - | T | L | 1 | - | - | - | - |
| Transformer Block 220-240/24VLED            | - | - | - | -                         | - | - | - | - | - | - | - | - | T | L | 2 | - | - | - | - |
| Transformer Block 380-420/24VLED            | - | - | - | -                         | - | - | - | - | - | - | - | - | T | L | 3 | - | - | - | - |
| Transformer Block 440-480/24VLED            | - | - | - | -                         | - | - | - | - | - | - | - | - | T | L | 4 | - | - | - | - |
| 5 Block Holder                              | - | - | - | -                         | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 5 |
| 30mm Black Plastic Adaptor Ring             | G | 1 | - | -                         | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 30mm Chrome Metal Adaptor Ring              | G | 2 | - | -                         | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

See catalog number explanation on page 7.70.

### Contact functions

Block positions as seen  
from operator front.

| Handle position | Left block | Right block |
|-----------------|------------|-------------|
| A               | X          | O           |
| B               | O          | O           |
| C               | O          | X           |

O = not actuated (normal state)

X = actuated (changed state)

### Center position connection detail

See page 7.56.

① No contact block in center position.

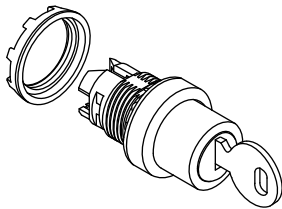
② No LED or transformer block can be combined with "Illuminated without lamp block" selection.

③ Includes one diode chip integrated into lamp block.

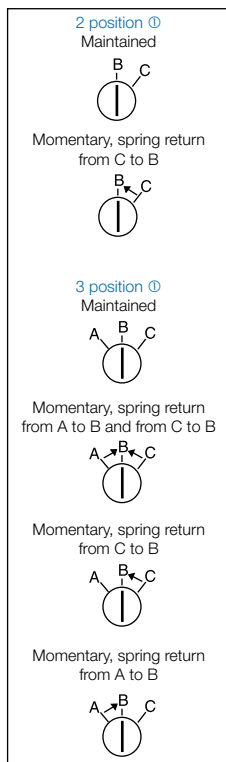
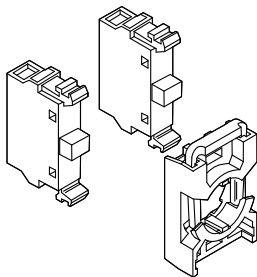
# Key-operated selector switches

## Two & three position ①

Pilot Devices  
Modular Range  
Assembled, 22 & 30mm



Key operated



### Key-operated selector switches, 2 & 3 position ①

| Options                                                                               | Catalog number characters |   |   |   |   |   |   |   |  |  |  |   |   |   |   |
|---------------------------------------------------------------------------------------|---------------------------|---|---|---|---|---|---|---|--|--|--|---|---|---|---|
| 2 Maintained Positions, Key Removable in B and C                                      | M                         | 2 | S | S | K | 1 | - |   |  |  |  |   |   |   |   |
| 2 Maintained Positions, Key Removable in B                                            | M                         | 2 | S | S | K | 2 | - |   |  |  |  |   |   |   |   |
| 2 Positions, Spring Return from C to B, Key Removable in B                            | M                         | 2 | S | S | K | 3 | - |   |  |  |  |   |   |   |   |
| 3 Maintained Positions, Key Removable in A, B and C                                   | M                         | 3 | S | S | K | 1 | - |   |  |  |  |   |   |   |   |
| 3 Maintained Positions, Key Removable in B                                            | M                         | 3 | S | S | K | 2 | - |   |  |  |  |   |   |   |   |
| 3 Positions, Spring Return from A and C to B, Key Removable in B                      | M                         | 3 | S | S | K | 3 | - |   |  |  |  |   |   |   |   |
| 3 Positions, A and B maintained, Spring Return C to B, Key Removable in A             | M                         | 3 | S | S | K | 4 | - |   |  |  |  |   |   |   |   |
| 3 Positions, A and B maintained, Spring Return C to B, Key Removable in All Positions | M                         | 3 | S | S | K | 5 | - |   |  |  |  |   |   |   |   |
| Bezel, Black Plastic, with Holder                                                     |                           |   |   |   |   |   | 4 | 0 |  |  |  |   |   |   |   |
| Bezel, Chrome Metal, with Holder                                                      |                           |   |   |   |   |   | 6 | 0 |  |  |  |   |   |   |   |
| Key Code 71                                                                           |                           |   |   |   |   |   |   |   |  |  |  | 1 |   |   |   |
| Key Code 72                                                                           |                           |   |   |   |   |   |   |   |  |  |  | 2 |   |   |   |
| Key Code 73                                                                           |                           |   |   |   |   |   |   |   |  |  |  | 3 |   |   |   |
| Other Key Code                                                                        |                           |   |   |   |   |   |   |   |  |  |  | 4 |   |   |   |
| Contact Blocks, 1NO                                                                   |                           |   |   |   |   |   |   |   |  |  |  |   | 1 | 0 |   |
| Contact Blocks, 2NO                                                                   |                           |   |   |   |   |   |   |   |  |  |  |   | 2 | 0 |   |
| Contact Blocks, 3NO                                                                   |                           |   |   |   |   |   |   |   |  |  |  |   | 3 | 0 |   |
| Contact Blocks, 1NC                                                                   |                           |   |   |   |   |   |   |   |  |  |  |   | 0 | 1 |   |
| Contact Blocks, 2NC                                                                   |                           |   |   |   |   |   |   |   |  |  |  |   | 0 | 2 |   |
| Contact Blocks, 3NC                                                                   |                           |   |   |   |   |   |   |   |  |  |  |   | 0 | 3 |   |
| Contact Blocks, 1NO+1NC                                                               |                           |   |   |   |   |   |   |   |  |  |  |   | 1 | 1 |   |
| Contact Blocks, 2NO+1NC                                                               |                           |   |   |   |   |   |   |   |  |  |  |   | 2 | 1 |   |
| Contact Blocks, 1NO+2NC                                                               |                           |   |   |   |   |   |   |   |  |  |  |   | 1 | 2 |   |
| Contact Blocks, 1NO, Gold                                                             |                           |   |   |   |   |   |   |   |  |  |  |   | 1 | 0 | G |
| Contact Blocks, 2NO, Gold                                                             |                           |   |   |   |   |   |   |   |  |  |  |   | 2 | 0 | G |
| Contact Blocks, 3NO, Gold                                                             |                           |   |   |   |   |   |   |   |  |  |  |   | 3 | 0 | G |
| Contact Blocks, 1NC, Gold                                                             |                           |   |   |   |   |   |   |   |  |  |  |   | 0 | 1 | G |
| Contact Blocks, 2NC, Gold                                                             |                           |   |   |   |   |   |   |   |  |  |  |   | 0 | 2 | G |
| Contact Blocks, 3NC, Gold                                                             |                           |   |   |   |   |   |   |   |  |  |  |   | 0 | 3 | G |
| Contact Blocks, 1NO+1NC, Gold                                                         |                           |   |   |   |   |   |   |   |  |  |  |   | 1 | 1 | G |
| Contact Blocks, 2NO+1NC, Gold                                                         |                           |   |   |   |   |   |   |   |  |  |  |   | 2 | 1 | G |
| Contact Blocks, 1NO+2NC, Gold                                                         |                           |   |   |   |   |   |   |   |  |  |  |   | 1 | 2 | G |
| 5 Block Holder                                                                        |                           |   |   |   |   |   |   |   |  |  |  |   |   |   | 5 |
| 30mm Black Plastic Adaptor Ring                                                       | G                         | 1 |   |   |   |   |   |   |  |  |  |   |   |   |   |
| 30mm Chrome Metal Adaptor Ring                                                        | G                         | 2 |   |   |   |   |   |   |  |  |  |   |   |   |   |

See catalog number explanation on page 7.70.

### Extra key

| Description                | Catalog No.   | Reference code |
|----------------------------|---------------|----------------|
| Ronis 455 (key code 71)    | SK 616 021-71 | SK 616 021-71  |
| Ronis 421 (key code 72)    | SK 616 021-72 | SK 616 021-72  |
| Ronis 3433-E (key code 73) | SK 616 021-73 | SK 616 021-73  |

### Contact block functions

Block positions as seen from operator front.

#### 2 Position switch

| Handle position | Left block | Right block |
|-----------------|------------|-------------|
| B               | O          | O           |
| C               | X          | X           |

O = not actuated (normal state)  
X = actuated (changed state)

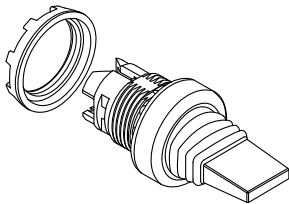
#### 3 Position switch

| Handle position | Left block | Right block |
|-----------------|------------|-------------|
| A               | O          | X           |
| B               | O          | O           |
| C               | X          | O           |

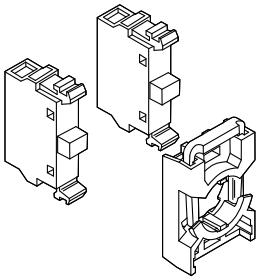
O = not actuated (normal state)  
X = actuated (changed state)

① No contact block in center position.

## Toggle switches



Toggle switch



### Toggle switches

| Options                              | Catalog number characters |   |   |   |   |   |   |   |   |   |
|--------------------------------------|---------------------------|---|---|---|---|---|---|---|---|---|
| 2 Maintained Positions               |                           |   | M | T | S | 1 | - |   |   |   |
| 3 Positions, Spring Return to Center |                           |   | M | T | S | 2 | - |   |   |   |
| 3 Maintained Positions               |                           |   | M | T | S | 3 | - |   |   |   |
| Bezel, Black, with Holder            |                           |   |   |   |   |   | 4 | 0 |   |   |
| Bezel, Chrome, with Holder           |                           |   |   |   |   |   | 6 | 0 |   |   |
| Switch Color - Black                 |                           |   |   |   |   |   |   |   | B |   |
| Contact Blocks, 1NO                  |                           |   |   |   |   |   |   |   | 1 | 0 |
| Contact Blocks, 2NO                  |                           |   |   |   |   |   |   |   | 2 | 0 |
| Contact Blocks, 3NO                  |                           |   |   |   |   |   |   |   | 3 | 0 |
| Contact Blocks, 1NC                  |                           |   |   |   |   |   |   |   | 0 | 1 |
| Contact Blocks, 2NC                  |                           |   |   |   |   |   |   |   | 0 | 2 |
| Contact Blocks, 3NC                  |                           |   |   |   |   |   |   |   | 0 | 3 |
| Contact Blocks, 1NO+1NC              |                           |   |   |   |   |   |   |   | 1 | 1 |
| Contact Blocks, 2NO+1NC              |                           |   |   |   |   |   |   |   | 2 | 1 |
| Contact Blocks, 1NO+2NC              |                           |   |   |   |   |   |   |   | 1 | 2 |
| Contact Blocks, 1NO, Gold            |                           |   |   |   |   |   |   |   | 1 | 0 |
| Contact Blocks, 2NO, Gold            |                           |   |   |   |   |   |   |   | 2 | 0 |
| Contact Blocks, 3NO, Gold            |                           |   |   |   |   |   |   |   | 3 | 0 |
| Contact Blocks, 1NC, Gold            |                           |   |   |   |   |   |   |   | 0 | 1 |
| Contact Blocks, 2NC, Gold            |                           |   |   |   |   |   |   |   | 0 | 2 |
| Contact Blocks, 3NC, Gold            |                           |   |   |   |   |   |   |   | 0 | 3 |
| Contact Blocks, 1NO+1NC, Gold        |                           |   |   |   |   |   |   |   | 1 | 1 |
| Contact Blocks, 2NO+1NC, Gold        |                           |   |   |   |   |   |   |   | 2 | 1 |
| Contact Blocks, 1NO+2NC, Gold        |                           |   |   |   |   |   |   |   | 1 | 2 |
| 5 Block Holder                       |                           |   |   |   |   |   |   |   |   |   |
| 30mm Black Plastic Adaptor Ring      | G                         | 1 |   |   |   |   |   |   |   |   |
| 30mm Chrome Metal Adaptor Ring       | G                         | 2 |   |   |   |   |   |   |   |   |

See catalog number explanation on page 7.70.

#### Maintained



### Contact block functions

Block positions as seen from operator front.

#### 2 Position switch

| Handle position | Left block | Right block |
|-----------------|------------|-------------|
| A               | O          | O           |
| C               | X          | X           |

O = not actuated (normal state)

X = actuated (changed state)

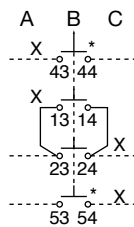
#### 3 Position switch

| Handle position | Left block | Right block |
|-----------------|------------|-------------|
| A               | O          | X           |
| B               | O          | O           |
| C               | X          | O           |

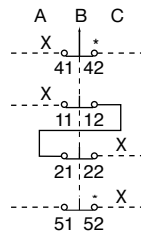
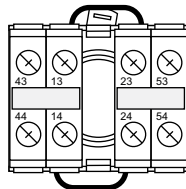
O = not actuated (normal state)

X = actuated (changed state)

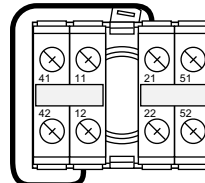
### Center position connection detail



\* Contacts may be N.O. or N.C.

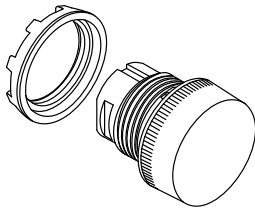


\* Contacts may be N.O. or N.C.

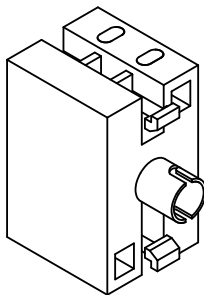
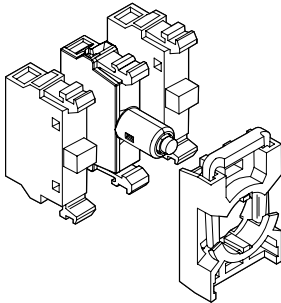
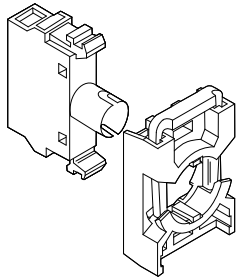


# Pilot lights

Pilot Devices  
Modular Range  
Assembled, 22 & 30mm



Pilot light



## Pilot lights

| Options                                     | Catalog number characters |   |   |   |   |   |   |   |   |   |   |       |
|---------------------------------------------|---------------------------|---|---|---|---|---|---|---|---|---|---|-------|
| Pilot Light with light diffusing lens       |                           |   | M | L | 1 | - | 2 | 0 | R |   |   |       |
| With Holder                                 |                           |   |   |   |   | - |   |   | G |   |   |       |
| Lens Color - Red                            |                           |   |   |   |   | - |   |   | Y |   |   |       |
| Lens Color - Green                          |                           |   |   |   |   | - |   |   | L |   |   |       |
| Lens Color - Yellow                         |                           |   |   |   |   | - |   |   | W |   |   |       |
| Lens Color - Blue                           |                           |   |   |   |   | - |   |   | C |   |   |       |
| Lens Color - White                          |                           |   |   |   |   | - |   |   |   |   |   |       |
| Lens Color - Clear                          |                           |   |   |   |   | - |   |   |   |   |   |       |
| Lamp block, MLB-1, Bulb not Included        |                           |   |   |   |   | - |   |   |   | 1 | 0 |       |
| Lamp block, MLB-4, Bulb not Included        |                           |   |   |   |   | - |   |   |   | 0 | 1 |       |
| Lamp block, MLB-5, Bulb not Included        |                           |   |   |   |   | - |   |   |   | 0 | 2 |       |
| Lamp block w/integrated LED ①               |                           |   |   |   |   | - |   |   |   |   | 7 |       |
| Lamp block with zener diode, bulb not incl. |                           |   |   |   |   | - |   |   |   |   | 8 |       |
| LED 12VDC                                   |                           |   |   |   |   | - |   |   |   |   |   | L 7   |
| LED 24VAC/DC                                |                           |   |   |   |   | - |   |   |   |   |   | L 8   |
| LED 48VAC/DC                                |                           |   |   |   |   | - |   |   |   |   |   | L 9   |
| LED 60VAC/DC                                |                           |   |   |   |   | - |   |   |   |   |   | L 6 0 |
| LED 110-130VAC                              |                           |   |   |   |   | - |   |   |   |   |   | L 1   |
| LED 110-130VAC/DC                           |                           |   |   |   |   | - |   |   |   |   |   | L 1 3 |
| LED 230V AC/DC                              |                           |   |   |   |   | - |   |   |   |   |   | L 2   |
| LED 230V, AC-integrated only                |                           |   |   |   |   | - |   |   |   |   |   | L 2 3 |
| LED 380V, AC-integrated only                |                           |   |   |   |   | - |   |   |   |   |   | L 3 8 |
| LED 415V, AC-integrated only                |                           |   |   |   |   | - |   |   |   |   |   | L 4 1 |
| Transformer Block 110-127/24VLED            |                           |   |   |   |   | - |   |   |   |   |   | TL1   |
| Transformer Block 220-240/24VLED            |                           |   |   |   |   | - |   |   |   |   |   | TL2   |
| Transformer Block 380-420/24VLED            |                           |   |   |   |   | - |   |   |   |   |   | TL3   |
| Transformer Block 440-480/24VLED            |                           |   |   |   |   | - |   |   |   |   |   | TL4   |
| 5 Block Holder                              |                           |   |   |   |   | - |   |   |   |   |   |       |
| 30mm Black Plastic Adaptor Ring             | G                         | 1 |   |   |   | - |   |   |   |   |   |       |
| 30mm Chrome Metal Adaptor Ring              | G                         | 2 |   |   |   | - |   |   |   |   |   |       |

See catalog number explanation on page 7.70.

① Includes one diode chip integrated into lamp block.

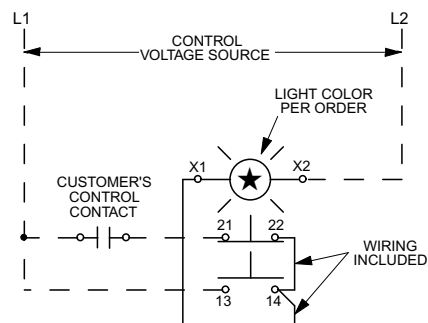
## Press to test pilot lights

### Press to test pilot lights ②

| Options                                        | Catalog number characters |   |   |   |   |   |    |     |  |       |
|------------------------------------------------|---------------------------|---|---|---|---|---|----|-----|--|-------|
|                                                |                           |   |   |   |   |   |    |     |  |       |
| Momentary, Flush                               |                           |   | M | P | 1 | - |    |     |  |       |
| Momentary, Extended                            |                           |   | M | P | 3 | - |    |     |  |       |
| Bezel, Black Plastic with Holder, 1/1 Contacts |                           |   |   |   |   |   | KL |     |  |       |
| Bezel, Chrome Metal with Holder, 1/1 Contacts  |                           |   |   |   |   |   | ML |     |  |       |
| Illuminated without Lamp Block                 |                           |   |   |   |   |   |    | PT  |  |       |
| Full Voltage Lamp Block,                       |                           |   |   |   |   |   |    |     |  |       |
| (select LED from below)                        |                           |   |   |   |   |   |    | FPT |  |       |
| Resistor Lamp Block,                           |                           |   |   |   |   |   |    |     |  |       |
| (select 120V or 240V LED only)                 |                           |   |   |   |   |   |    | RPT |  |       |
| LED, 12VDC                                     |                           |   |   |   |   |   |    |     |  | L7    |
| LED, 24VAC/DC                                  |                           |   |   |   |   |   |    |     |  | L8    |
| LED, 48VAC/DC                                  |                           |   |   |   |   |   |    |     |  | L9    |
| LED, 60VAC/DC                                  |                           |   |   |   |   |   |    |     |  | L60   |
| LED 110-130VAC                                 |                           |   |   |   |   |   |    |     |  | L1    |
| LED 110-130VAC/DC                              |                           |   |   |   |   |   |    |     |  | L13   |
| LED 230VAC/DC                                  |                           |   |   |   |   |   |    |     |  | L2    |
| LED 230VAC Integrated only                     |                           |   |   |   |   |   |    |     |  | L230  |
| LED 380VAC Integrated only                     |                           |   |   |   |   |   |    |     |  | L38   |
| LED 415VAC Integrated only                     |                           |   |   |   |   |   |    |     |  | L41   |
| Transformer + Lamp Block 110-127/6VBulb        |                           |   |   |   |   |   |    |     |  | TPT1  |
| Transformer + Lamp Block 220-240/6VBulb        |                           |   |   |   |   |   |    |     |  | TPT2  |
| Transformer + Lamp Block 380-420/6VBulb        |                           |   |   |   |   |   |    |     |  | TPT3  |
| Transformer + Lamp Block 440-480/6VBulb        |                           |   |   |   |   |   |    |     |  | TPT4  |
| Transformer + Lamp Block 500-600/6VBulb        |                           |   |   |   |   |   |    |     |  | TPT5  |
| Transformer + Lamp Block 110-127/24VBulb       |                           |   |   |   |   |   |    |     |  | TPT6  |
| Transformer + Lamp Block 220-240/24VBulb       |                           |   |   |   |   |   |    |     |  | TPT7  |
| Transformer + Lamp Block 380-420/24VBulb       |                           |   |   |   |   |   |    |     |  | TPT8  |
| Transformer + Lamp Block 440-480/24VBulb       |                           |   |   |   |   |   |    |     |  | TPT9  |
| Transformer + Lamp Block 110-127/24VLED        |                           |   |   |   |   |   |    |     |  | TPTL1 |
| Transformer + Lamp Block 220-240/24VLED        |                           |   |   |   |   |   |    |     |  | TPTL2 |
| Transformer + Lamp Block 380-420/24VLED        |                           |   |   |   |   |   |    |     |  | TPTL3 |
| Transformer + Lamp Block 440-480/24VLED        |                           |   |   |   |   |   |    |     |  | TPTL4 |
| Button Color - Red                             |                           |   |   |   |   |   |    |     |  | R     |
| Button Color - Green                           |                           |   |   |   |   |   |    |     |  | G     |
| Button Color - Yellow                          |                           |   |   |   |   |   |    |     |  | Y     |
| Button Color - Blue                            |                           |   |   |   |   |   |    |     |  | L     |
| Button Color - White                           |                           |   |   |   |   |   |    |     |  | W     |
| Button Color - Clear                           |                           |   |   |   |   |   |    |     |  | C     |
| 30mm Black Plastic Adaptor Ring                | G                         | 1 |   |   |   |   |    |     |  |       |
| 30mm Chrome Metal Adaptor Ring                 | G                         | 2 |   |   |   |   |    |     |  |       |

See catalog number explanation on page 7.70.

### Schematic



Press- to-test schematic

① LED or transformer block cannot be combined with "illuminated without lamp block" selection.  
② 1 NO & 1NC contact blocks included.

# Compact Range, 22mm Pilot devices



The Compact Range is designed to be our most efficient solution when it comes to assembly and cost, suitable for the most demanding environments. It can also be combined with the Modular Range to cover the needs of additional flexibility.

## General construction

- "All-in-one design"
- Same front as modular
- 42mm built in depth
- Up to 2 electrical separated contacts
- Metal or black plastic look
- UL file #E76003

## Product features

- Suitable in the toughest environments IP 66, 67 & 69K
- Wiping action gives high performance with low energies
- UL/NEMA Type 1,3R,4,4X,12,13

## Operators

- Pushbuttons (illuminated & non illuminated)
- Emergency stops (twist, pull & key release)
- Machine stops (twist, pull & key release)
- Selector switches (2 & 3 position)
- Mushrooms

## Pilot lights

- Integrated LED (wide range of voltages)
- BA9s base for filament bulb or LED



## Pushbuttons

Flush and extended, non-illuminated

### Color codes for pushbuttons

|   | Red | Green | Yellow | Blue | White | Black | Grey |
|---|-----|-------|--------|------|-------|-------|------|
| Δ | R   | G     | Y      | L    | W     | B     | U    |

### Bezel - How to order

Black Plastic - Standard  
Chrome Metal - Replace '1' with '3' in  
Catalog number



| Bezel options | Catalog number |
|---------------|----------------|
| Black plastic | CP(X)10X-XX    |
| Chrome metal  | CP(X)30X-XX    |

7



Flush pushbutton

### Operator: Flush and extended pushbutton

| Description             | Catalog number | Weight oz. |
|-------------------------|----------------|------------|
| <b>Flush pushbutton</b> |                |            |
| <b>Momentary</b>        |                |            |
| 1 NO                    | CP110Δ-10      | 0.63       |
| 2 NO                    | CP110Δ-20      | 0.78       |
| 1 NC                    | CP110Δ-01      | 0.63       |
| 2 NC                    | CP110Δ-02      | 0.78       |
| 1 NO +1 NC              | CP110Δ-11      | 0.78       |
| <b>Maintained</b>       |                |            |
| 1 NO                    | CP210Δ-10      | 0.63       |
| 2 NO                    | CP210Δ-20      | 0.78       |
| 1 NC                    | CP210Δ-01      | 0.63       |
| 2 NC                    | CP210Δ-02      | 0.78       |
| 1 NO +1 NC              | CP210Δ-11      | 0.78       |



Extended pushbutton

### Extended pushbutton

|                   |           |      |
|-------------------|-----------|------|
| <b>Momentary</b>  |           |      |
| 1 NO              | CP310Δ-10 | 0.67 |
| 2 NO              | CP310Δ-20 | 0.78 |
| 1 NC              | CP310Δ-01 | 0.67 |
| 2 NC              | CP310Δ-02 | 0.78 |
| 1 NO +1 NC        | CP310Δ-11 | 0.78 |
| <b>Maintained</b> |           |      |
| 1 NO              | CP410Δ-10 | 0.67 |
| 2 NO              | CP410Δ-20 | 0.78 |
| 1 NC              | CP410Δ-01 | 0.67 |
| 2 NC              | CP410Δ-02 | 0.78 |
| 1 NO +1 NC        | CP410Δ-11 | 0.78 |



Flush pushbutton  
with marking

### Flush pushbutton

Momentary, white button with black I

|                                              |            |      |
|----------------------------------------------|------------|------|
| 1 NO                                         | CP1110W-10 | 0.63 |
| <b>Momentary, white button with black II</b> |            |      |
| 1 NO                                         | CP1210W-10 | 0.63 |

### Extended pushbutton

Momentary, black button with white O

|      |            |      |
|------|------------|------|
| 1 NC | CP3310B-01 | 0.63 |
|------|------------|------|



## Pushbuttons

### Flush and extended, illuminated

#### Bezel - How to order

Black plastic - Standard  
Chrome metal - Replace '1' with '3' in Catalog number



| Bezel options | Catalog number |
|---------------|----------------|
| Black plastic | CP(X)1XX-XX    |
| Chrome metal  | CP(X)3XX-XX    |



Illuminated pushbutton



Illuminated pushbutton extended

#### Operator: Illuminated pushbutton with integrated LED

| Description | Catalog number | Weight oz. |
|-------------|----------------|------------|
|-------------|----------------|------------|

##### Flush pushbutton 24V AC/DC

###### Momentary

|        |      |           |      |
|--------|------|-----------|------|
| Red    | 1 NC | CP111R-01 | 0.88 |
| Red    | 1 NO | CP111R-10 | 0.88 |
| Green  | 1 NO | CP111G-10 | 0.88 |
| Yellow | 1 NO | CP111Y-10 | 0.88 |

###### Maintained

|        |      |           |      |
|--------|------|-----------|------|
| Red    | 1 NC | CP211R-01 | 0.88 |
| Red    | 1 NO | CP211R-10 | 0.88 |
| Green  | 1 NO | CP211G-10 | 0.88 |
| Yellow | 1 NO | CP211Y-10 | 0.88 |

##### Extended pushbutton 24V AC/DC

###### Momentary

|        |      |           |      |
|--------|------|-----------|------|
| Red    | 1 NC | CP311R-01 | 0.88 |
| Red    | 1 NO | CP311R-10 | 0.88 |
| Green  | 1 NO | CP311G-10 | 0.88 |
| Yellow | 1 NO | CP311Y-10 | 0.88 |

###### Maintained

|        |      |           |      |
|--------|------|-----------|------|
| Red    | 1 NC | CP411R-01 | 0.88 |
| Red    | 1 NO | CP411R-10 | 0.88 |
| Green  | 1 NO | CP411G-10 | 0.88 |
| Yellow | 1 NO | CP411Y-10 | 0.88 |

##### Flush pushbutton 110-130V AC/DC

###### Momentary

|        |      |           |      |
|--------|------|-----------|------|
| Red    | 1 NC | CP112R-01 | 0.88 |
| Red    | 1 NO | CP112R-10 | 0.88 |
| Green  | 1 NO | CP112G-10 | 0.88 |
| Yellow | 1 NO | CP112Y-10 | 0.88 |

###### Maintained

|        |      |           |      |
|--------|------|-----------|------|
| Red    | 1 NC | CP212R-01 | 0.88 |
| Red    | 1 NO | CP212R-10 | 0.88 |
| Green  | 1 NO | CP212G-10 | 0.88 |
| Yellow | 1 NO | CP212Y-10 | 0.88 |

##### Extended pushbutton 110-130V AC/DC

###### Momentary

|        |      |           |      |
|--------|------|-----------|------|
| Red    | 1 NC | CP312R-01 | 0.88 |
| Red    | 1 NO | CP312R-10 | 0.88 |
| Green  | 1 NO | CP312G-10 | 0.88 |
| Yellow | 1 NO | CP312Y-10 | 0.88 |

## Illuminated pushbuttons

### Flush and extended, illuminated



Illuminated pushbutton

#### Operator: Illuminated pushbutton with integrated LED

| Description                               |      | Catalog number | Weight<br>oz. |
|-------------------------------------------|------|----------------|---------------|
| <b>Extended pushbutton 110-130V AC/DC</b> |      |                |               |
| Maintained                                |      |                |               |
| Red                                       | 1 NC | CP412R-01      | 0.88          |
| Red                                       | 1 NO | CP412R-10      | 0.88          |
| Green                                     | 1 NO | CP412G-10      | 0.88          |
| Yellow                                    | 1 NO | CP412Y-10      | 0.88          |

#### Flush pushbutton 220V AC/DC

##### Momentary

|        |      |           |      |
|--------|------|-----------|------|
| Red    | 1 NC | CP113R-01 | 0.88 |
| Red    | 1 NO | CP113R-10 | 0.88 |
| Green  | 1 NO | CP113G-10 | 0.88 |
| Yellow | 1 NO | CP113Y-10 | 0.88 |

##### Maintained

|        |      |           |      |
|--------|------|-----------|------|
| Red    | 1 NC | CP213R-01 | 0.88 |
| Red    | 1 NO | CP213R-10 | 0.88 |
| Green  | 1 NO | CP213G-10 | 0.88 |
| Yellow | 1 NO | CP213Y-10 | 0.88 |

#### Extended pushbutton 220V AC/DC

##### Momentary

|        |      |           |      |
|--------|------|-----------|------|
| Red    | 1 NC | CP313R-01 | 0.88 |
| Red    | 1 NO | CP313R-10 | 0.88 |
| Green  | 1 NO | CP313G-10 | 0.88 |
| Yellow | 1 NO | CP313Y-10 | 0.88 |

##### Maintained

|        |      |           |      |
|--------|------|-----------|------|
| Red    | 1 NC | CP413R-01 | 0.88 |
| Red    | 1 NO | CP413R-10 | 0.88 |
| Green  | 1 NO | CP413G-10 | 0.88 |
| Yellow | 1 NO | CP413Y-10 | 0.88 |



Illuminated pushbutton  
extended

## Compact mushrooms



Compact mushroom

#### Operator: Compact mushroom

| Description |             | Catalog number | Weight<br>oz. |
|-------------|-------------|----------------|---------------|
| Red         | 1 NO + 1 NC | CPM310R-11     | 1.3           |
| Green       | 1 NO + 1 NC | CPM310G-11     | 1.3           |
| Yellow      | 1 NO + 1 NC | CPM310Y-11     | 1.3           |
| Black       | 1 NO + 1 NC | CPM310B-11     | 1.3           |
| Blue        | 1 NO + 1 NC | CPM310L-11     | 1.3           |

## Emergency stop pushbuttons

### Non-illuminated

### 30mm and 40mm

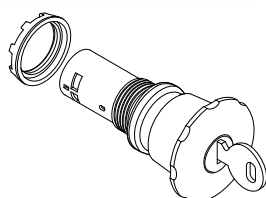
7



Emergency stop pushbutton  
twist release, 30 mm



Emergency stop pushbutton  
pull release, 40 mm



Emergency stop pushbutton  
key release, 40mm

#### Operator: Emergency stop pushbutton

| Description                                         | Catalog number | Weight oz. |
|-----------------------------------------------------|----------------|------------|
| <b>Emergency stop pushbutton</b>                    |                |            |
| <i>Twist release, Ø 30 mm</i>                       |                |            |
| 1 NC                                                | CE3T-10R-01    | 1.1        |
| 2 NO                                                | CE3T-10R-20    | 1.1        |
| 2 NO                                                | CE4T-10R-20    | 1.1        |
| 2 NC                                                | CE3T-10R-02    | 1.1        |
| 1 NO + 1 NC                                         | CE3T-10R-11    | 1.1        |
| <i>Key release Ø 30 mm: Ronis 455, Key code 71</i>  |                |            |
| 2 NC                                                | CE3K1-10R-02   | 2.1        |
| 1 NO + 1 NC                                         | CE3K1-10R-11   | 2.1        |
| <i>Twist release Ø 40 mm</i>                        |                |            |
| 1 NC                                                | CE4T-10R-01    | 1.3        |
| 2 NC                                                | CE4T-10R-02    | 1.3        |
| 1 NO + NC                                           | CE4T-10R-11    | 1.3        |
| <i>Key release Ø 40 mm: Key code 71 = Ronis 455</i> |                |            |
| 2 NC                                                | CE4K1-10R-02   | 2.3        |
| 1 NO + 1 NC                                         | CE4K1-10R-11   | 2.3        |
| <b>"EMO" Marking</b>                                |                |            |
| <b>Twist release</b>                                |                |            |
| <u>Contacts included:</u>                           |                |            |
| 2 NC                                                | Red            | CE9-1003   |
|                                                     |                | 0.087      |

## Twist, pull or key release operators

### Non-illuminated

### 30mm and 40 mm

#### Operator: Twist, pull or key release



Machine stop pushbutton  
twist release 30 mm

| Description                                         | Catalog number | Weight oz. |
|-----------------------------------------------------|----------------|------------|
| <b>Machine stop pushbutton</b>                      |                |            |
| <i>Twist release Ø 30 mm</i>                        |                |            |
| 1 NO + 1 NC                                         | CE3T-10B-11    | 1.1        |
| <i>Pull release Ø 30 mm</i>                         |                |            |
| 1 NO + 1 NC                                         | CE3P-10B-11    | 1.1        |
| <i>Key release Ø 30 mm: Key code 71 = Ronis 455</i> |                |            |
| 1 NO + 1 NC                                         | CE3K1-10B-11   | 2.1        |
| <i>Twist release Ø 40 mm</i>                        |                |            |
| 1 NO + 1 NC                                         | CE4T-10B-11    | 1.1        |
| <i>Pull release Ø 40 mm</i>                         |                |            |
| 1 NO + 1 NC                                         | CE4P-10B-11    | 1.1        |
| <i>Key release Ø 40 mm: Key code 71 = Ronis 455</i> |                |            |
| 1 NO + 1 NC                                         | CE4K1-10B-11   | 2.3        |
| <i>Pull release Ø 30 mm</i>                         |                |            |
| 2 NC                                                | CE3P-10R-02    | 1.1        |
| 1 NO + 1 NC                                         | CE3P-10R-11    | 1.1        |
| <i>Pull release Ø 40 mm</i>                         |                |            |
| 2 NC                                                | CE4P-10R-02    | 1.3        |
| 1 NO + 1 NC                                         | CE4P-10R-11    | 1.3        |

## Selector switches

### Two and three position, non-illuminated

#### Color codes for switches

|   | Red | Black | Grey |
|---|-----|-------|------|
| Δ | R   | B     | U    |

#### Bezel - How to order

Black plastic - Standard

Chrome metal - Replace '1' with '3' in Catalog number



| Bezel options | Catalog number  |
|---------------|-----------------|
| Black plastic | C(X)SS(X)10X-XX |
| Chrome metal  | C(X)SS(X)30X-XX |

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Selector switch

#### Operator: Selector switches

|                                                                                     | Description | Catalog number | Weight oz. |
|-------------------------------------------------------------------------------------|-------------|----------------|------------|
| Two-position                                                                        |             |                |            |
|    | 1 NO        | C2SS110Δ-10    | 0.71       |
|                                                                                     | 2 NO        | C2SS110Δ-20    | 0.85       |
|                                                                                     | 1 NC        | C2SS110Δ-01    | 0.71       |
|                                                                                     | 2 NC        | C2SS110Δ-02    | 0.85       |
|                                                                                     | 1 NO +1 NC  | C2SS110Δ-11    | 0.85       |
|                                                                                     |             |                |            |
| Maintained                                                                          |             |                |            |
|   | 1 NO        | C2SS210Δ-10    | 0.71       |
|                                                                                     | 2 NO        | C2SS210Δ-20    | 0.85       |
|                                                                                     | 1 NC        | C2SS210Δ-01    | 0.71       |
|                                                                                     | 2 NC        | C2SS210Δ-02    | 0.85       |
|                                                                                     | 1 NO +1 NC  | C2SS210Δ-11    | 0.85       |
|                                                                                     |             |                |            |
| Momentary                                                                           |             |                |            |
|  | 1 NO        | C2SS310Δ-10    | 0.71       |
|                                                                                     | 2 NO        | C2SS310Δ-20    | 0.85       |
|                                                                                     | 1 NC        | C2SS310Δ-01    | 0.71       |
|                                                                                     | 2 NC        | C2SS310Δ-02    | 0.85       |
|                                                                                     | 1 NO +1 NC  | C2SS310Δ-11    | 0.85       |
|                                                                                     |             |                |            |

#### 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  |

#### Three-position

|                                                                                     |            |             |      |
|-------------------------------------------------------------------------------------|------------|-------------|------|
| Maintained                                                                          |            |             |      |
|  | 2 NO       | C3SS110Δ-20 | 0.85 |
|                                                                                     | 2 NC       | C3SS110Δ-02 | 0.85 |
|                                                                                     | 1 NO +1 NC | C3SS110Δ-11 | 0.85 |
| Momentary                                                                           |            |             |      |
|  | 2 NO       | C3SS210Δ-20 | 0.85 |
|                                                                                     | 2 NC       | C3SS210Δ-02 | 0.85 |
|                                                                                     | 1 NO +1 NC | C3SS210Δ-11 | 0.85 |
| Momentary                                                                           |            |             |      |
|  | 2 NO       | C3SS310Δ-20 | 0.85 |
|                                                                                     | 2 NC       | C3SS310Δ-02 | 0.85 |
|                                                                                     | 1 NO +1 NC | C3SS310Δ-11 | 0.85 |
| Momentary                                                                           |            |             |      |
|  | 2 NO       | C3SS710Δ-20 | 0.85 |
|                                                                                     | 2 NC       | C3SS710Δ-02 | 0.85 |
|                                                                                     | 1 NO +1 NC | C3SS710Δ-11 | 0.85 |

# Pilot lights with integrated LED



Pilot light with integrated LED,  
with leakage current protection

## Operator: Pilot light with integrated LED

| Description                                                          | Rated Current<br>mA | Wavelength<br>nm | Luminance<br>mod | Catalog<br>number | Weight<br>oz. |
|----------------------------------------------------------------------|---------------------|------------------|------------------|-------------------|---------------|
| <b>Pilot light with integrated LED service life &gt;50 000 hours</b> |                     |                  |                  |                   |               |
| Rated voltage 12 V, DC <sup>1)</sup>                                 |                     |                  |                  |                   |               |
| Red                                                                  | 30                  | 625              | 60               | CL-501R           | 0.81          |
| Green                                                                | 15                  | 520              | 126              | CL-501G           | 0.81          |
| Yellow                                                               | 30                  | 590              | 60               | CL-501Y           | 0.81          |
| Blue                                                                 | 30                  | 470              | 22               | CL-501L           | 0.81          |
| White                                                                | 30                  | <sup>2)</sup>    | 88               | CL-501W           | 0.81          |
| Rated voltage 24 V, AC/DC                                            |                     |                  |                  |                   |               |
| Red                                                                  | 15                  | 625              | 60               | CL-502R           | 0.81          |
| Green                                                                | 15                  | 520              | 126              | CL-502G           | 0.81          |
| Yellow                                                               | 15                  | 590              | 60               | CL-502Y           | 0.81          |
| Blue                                                                 | 15                  | 470              | 22               | CL-502L           | 0.81          |
| White                                                                | 15                  | <sup>2)</sup>    | 88               | CL-502W           | 0.81          |
| Rated voltage 48 V, AC/DC                                            |                     |                  |                  |                   |               |
| Red                                                                  | 15                  | 625              | 60               | CL-504R           | 0.81          |
| Green                                                                | 15                  | 520              | 126              | CL-504G           | 0.81          |
| Yellow                                                               | 15                  | 590              | 60               | CL-504Y           | 0.81          |
| Blue                                                                 | 15                  | 470              | 22               | CL-504L           | 0.81          |
| White                                                                | 15                  | <sup>2)</sup>    | 88               | CL-504W           | 0.81          |
| Rated voltage 60 V, AC/DC                                            |                     |                  |                  |                   |               |
| Red                                                                  | 15                  | 625              | 60               | CL-505R           | 0.81          |
| Green                                                                | 15                  | 520              | 126              | CL-505G           | 0.81          |
| Yellow                                                               | 15                  | 590              | 60               | CL-505Y           | 0.81          |
| Blue                                                                 | 15                  | 470              | 22               | CL-505L           | 0.81          |
| White                                                                | 15                  | <sup>2)</sup>    | 88               | CL-505W           | 0.81          |
| Rated voltage 110-130 V, AC                                          |                     |                  |                  |                   |               |
| Red                                                                  | 15                  | 625              | 60               | CL-513R           | 0.81          |
| Green                                                                | 15                  | 520              | 126              | CL-513G           | 0.81          |
| Yellow                                                               | 15                  | 590              | 60               | CL-513Y           | 0.81          |
| Blue                                                                 | 15                  | 470              | 22               | CL-513L           | 0.81          |
| White                                                                | 15                  | <sup>2)</sup>    | 88               | CL-513W           | 0.81          |
| Rated voltage 110-130 V, DC <sup>1)</sup>                            |                     |                  |                  |                   |               |
| Red                                                                  | 15                  | 625              | 60               | CL-515R           | 0.81          |
| Green                                                                | 15                  | 520              | 126              | CL-515G           | 0.81          |
| Yellow                                                               | 15                  | 590              | 60               | CL-515Y           | 0.81          |
| Blue                                                                 | 15                  | 470              | 22               | CL-515L           | 0.81          |
| White                                                                | 15                  | <sup>2)</sup>    | 88               | CL-515W           | 0.81          |
| Rated voltage 220 V, DC <sup>1)</sup>                                |                     |                  |                  |                   |               |
| Red                                                                  | 15                  | 625              | 60               | CL-520R           | 0.81          |
| Green                                                                | 15                  | 520              | 126              | CL-520G           | 0.81          |
| Yellow                                                               | 15                  | 590              | 60               | CL-520Y           | 0.81          |
| Blue                                                                 | 15                  | 470              | 22               | CL-520L           | 0.81          |
| White                                                                | 15                  | <sup>2)</sup>    | 88               | CL-520W           | 0.81          |

**Note:** <sup>1)</sup> Care should be taken for DC supply where + and - must be correctly connected. This is marked X1 (+) and X2 (-) on the product.

<sup>2)</sup> X=0.31, Y=0.32 according to the ICI Chromaticity Diagram.



Pilot light with integrated LED,  
with leakage current protection

## Pilot lights with integrated LED

Operator: Pilot light with integrated LED - Service life 750,000 hours

| Description                    | Rated current<br>mA | Wavelength<br>nm | Luminance<br>mcd | Catalog<br>number | Weight<br>oz. |
|--------------------------------|---------------------|------------------|------------------|-------------------|---------------|
| <b>Rated voltage 230 V, AC</b> |                     |                  |                  |                   |               |
| Red                            | 15                  | 625              | 60               | CL-523R           | 0.81          |
| Green                          | 15                  | 520              | 126              | CL-523G           | 0.81          |
| Yellow                         | 15                  | 590              | 60               | CL-523Y           | 0.81          |
| Blue                           | 15                  | 470              | 22               | CL-523L           | 0.81          |
| White                          | 15                  | <sup>2)</sup>    | 88               | CL-523W           | 0.81          |
| <b>Rated voltage 380 V, AC</b> |                     |                  |                  |                   |               |
| Red                            | 15                  | 625              | 60               | CL-530R           | 0.81          |
| Green                          | 15                  | 520              | 126              | CL-530G           | 0.81          |
| Yellow                         | 15                  | 590              | 60               | CL-530Y           | 0.81          |
| Blue                           | 15                  | 470              | 22               | CL-530L           | 0.81          |
| White                          | 15                  | <sup>2)</sup>    | 88               | CL-530W           | 0.81          |
| <b>Rated voltage 415 V, AC</b> |                     |                  |                  |                   |               |
| Red                            | 15                  | 625              | 60               | CL-541R           | 0.81          |
| Green                          | 15                  | 520              | 126              | CL-541G           | 0.81          |
| Yellow                         | 15                  | 590              | 60               | CL-541Y           | 0.81          |
| Blue                           | 15                  | 470              | 22               | CL-541L           | 0.81          |
| White                          | 15                  | <sup>2)</sup>    | 88               | CL-541W           | 0.81          |

Note: <sup>2)</sup> X=0.31, Y=0.32 according to the ICI Chromaticity Diagram.

## Pilot lights



Pilot light

Operator: Pilot light – Ba 9s base, bulb not included

| Description                                      | Catalog number | Weight<br>oz. |
|--------------------------------------------------|----------------|---------------|
| <b>Pilot light BA 9s base, bulb not included</b> |                |               |
| Red                                              | CL-100R        | 0.018         |
| Green                                            | CL-100G        | 0.018         |
| Yellow                                           | CL-100Y        | 0.018         |
| Blue                                             | CL-100L        | 0.018         |
| White                                            | CL-100W        | 0.018         |
| Clear                                            | CL-100C        | 0.018         |

## Buzzers



Buzzer, green



Buzzer, red



Buzzer, yellow



Buzzer, black

| Description                        |            | Luminance<br>mcd | Catalog<br>number | Package<br>quantity | Weight<br>kg |
|------------------------------------|------------|------------------|-------------------|---------------------|--------------|
| <b>Non-illuminated</b>             |            |                  |                   |                     |              |
| <b>Rated voltage 24V, AC/DC</b>    |            |                  |                   |                     |              |
| Black                              | Continuous |                  | CB1-620B          | 10                  | 0.021        |
| Black                              | Pulsation  |                  | CB1-630B          | 10                  | 0.021        |
| <b>Rated voltage 110-130 V, AC</b> |            |                  |                   |                     |              |
| Black                              | Continuous |                  | CB1-621B          | 10                  | 0.021        |
| Black                              | Pulsation  |                  | CB1-631B          | 10                  | 0.021        |
| <b>Rated voltage 110-130 V, DC</b> |            |                  |                   |                     |              |
| Black                              | Continuous |                  | CB1-622B          | 10                  | 0.021        |
| Black                              | Pulsation  |                  | CB1-632B          | 10                  | 0.021        |
| <b>Rated voltage 230 V, AC</b>     |            |                  |                   |                     |              |
| Black                              | Continuous |                  | CB1-623B          | 10                  | 0.021        |
| Black                              | Pulsation  |                  | CB1-633B          | 10                  | 0.021        |
| <b>Illuminated</b>                 |            |                  |                   |                     |              |
| <b>Rated voltage 24V, AC/DC</b>    |            |                  |                   |                     |              |
| Green                              | Continuous | 126              | CB1-600G          | 10                  | 0.021        |
| Red                                | Pulsation  | 60               | CB1-610R          | 10                  | 0.021        |
| Yellow                             | Pulsation  | 60               | CB1-610Y          | 10                  | 0.021        |
| <b>Rated voltage 110-130 V, AC</b> |            |                  |                   |                     |              |
| Green                              | Continuous | 126              | CB1-601G          | 10                  | 0.021        |
| Red                                | Pulsation  | 60               | CB1-611R          | 10                  | 0.021        |
| Yellow                             | Pulsation  | 60               | CB1-611Y          | 10                  | 0.021        |
| <b>Rated voltage 110-130 V, DC</b> |            |                  |                   |                     |              |
| Green                              | Continuous | 126              | CB1-602G          | 10                  | 0.021        |
| Red                                | Pulsation  | 60               | CB1-612R          | 10                  | 0.021        |
| Yellow                             | Pulsation  | 60               | CB1-612Y          | 10                  | 0.021        |
| <b>Rated voltage 230 V, AC</b>     |            |                  |                   |                     |              |
| Green                              | Continuous | 126              | CB1-603G          | 10                  | 0.021        |
| Red                                | Pulsation  | 60               | CB1-613R          | 10                  | 0.021        |
| Yellow                             | Pulsation  | 60               | CB1-613Y          | 10                  | 0.021        |



LED bulbs

## Accessories

### LED Bulbs

| Description | Rated Current mA | Wavelength nm | Luminance mcd | Catalog number | Weight oz. |
|-------------|------------------|---------------|---------------|----------------|------------|
|-------------|------------------|---------------|---------------|----------------|------------|

#### LED Bulbs

With one diode chip inserted on Ba9s base, choose the same color for the LED and the lamp cap or else use a clear lamp cap. For white light, use a LED clear lens cap.

#### Rated voltage 12 V, AC service life >50 000 h

|        |    |               |      |          |      |
|--------|----|---------------|------|----------|------|
| Red    | 15 | 630           | 250  | KA2-2011 | 0.18 |
| Green  | 15 | 525           | 1000 | KA2-2012 | 0.18 |
| Yellow | 15 | 592           | 250  | KA2-2013 | 0.18 |
| Blue   | 15 | 470           | 450  | KA2-2014 | 0.18 |
| White  | 15 | <sup>1)</sup> | 600  | KA2-2015 | 0.18 |

#### Rated voltage 24 V, (AC)/DC service life >50 000 h

|        |    |               |     |          |      |
|--------|----|---------------|-----|----------|------|
| Red    | 15 | 630           | 250 | KA2-2021 | 0.18 |
| Green  | 15 | 525           | 800 | KA2-2022 | 0.18 |
| Yellow | 15 | 592           | 250 | KA2-2023 | 0.18 |
| Blue   | 15 | 470           | 400 | KA2-2024 | 0.18 |
| White  | 15 | <sup>1)</sup> | 500 | KA2-2025 | 0.18 |

#### Rated voltage 36 V, (AC)/DC service life >50 000 h

|        |    |               |      |          |      |
|--------|----|---------------|------|----------|------|
| Red    | 12 | 630           | 200  | KA2-2031 | 0.18 |
| Green  | 12 | 525           | 2000 | KA2-2032 | 0.18 |
| Yellow | 12 | 592           | 200  | KA2-2033 | 0.18 |
| Blue   | 12 | 470           | 750  | KA2-2034 | 0.18 |
| White  | 12 | <sup>1)</sup> | 1400 | KA2-2035 | 0.18 |

#### Rated voltage 48 V, (AC)/DC service life >50 000 h

|        |    |               |      |          |      |
|--------|----|---------------|------|----------|------|
| Red    | 12 | 630           | 200  | KA2-2041 | 0.18 |
| Green  | 12 | 525           | 1700 | KA2-2042 | 0.18 |
| Yellow | 12 | 592           | 240  | KA2-2043 | 0.18 |
| Blue   | 12 | 470           | 720  | KA2-2044 | 0.18 |
| White  | 12 | <sup>1)</sup> | 1200 | KA2-2045 | 0.18 |

#### Rated voltage 60 V, (AC)/DC service life >50 000 h

|        |    |               |      |          |      |
|--------|----|---------------|------|----------|------|
| Red    | 10 | 630           | 160  | KA2-2051 | 0.18 |
| Green  | 10 | 525           | 1400 | KA2-2052 | 0.18 |
| Yellow | 10 | 592           | 200  | KA2-2053 | 0.18 |
| Blue   | 10 | 470           | 600  | KA2-2054 | 0.18 |
| White  | 10 | <sup>1)</sup> | 1000 | KA2-2055 | 0.18 |

#### Rated voltage 110-130 V, AC service life 25 000 h

|        |     |               |         |          |      |
|--------|-----|---------------|---------|----------|------|
| Red    | 4-6 | 630           | 60-100  | KA2-2131 | 0.18 |
| Green  | 4-6 | 525           | 500-850 | KA2-2132 | 0.18 |
| Yellow | 4-6 | 592           | 70-120  | KA2-2133 | 0.18 |
| Blue   | 4-6 | 470           | 220-350 | KA2-2134 | 0.18 |
| White  | 4-6 | <sup>1)</sup> | 350-600 | KA2-2135 | 0.18 |

#### Rated voltage 110-130 V, AC/DC service life 25 000 h

|        |     |               |     |          |      |
|--------|-----|---------------|-----|----------|------|
| Red    | 4-6 | 630           | 60  | KA2-2141 | 0.18 |
| Green  | 4-6 | 525           | 500 | KA2-2142 | 0.18 |
| Yellow | 4-6 | 592           | 70  | KA2-2143 | 0.18 |
| Blue   | 4-6 | 470           | 220 | KA2-2144 | 0.18 |
| White  | 4-6 | <sup>1)</sup> | 350 | KA2-2145 | 0.18 |

#### Rated voltage 230 V, AC service life 25 000 h

|        |   |               |     |          |      |
|--------|---|---------------|-----|----------|------|
| Red    | 4 | 630           | 60  | KA2-2221 | 0.18 |
| Green  | 4 | 525           | 500 | KA2-2222 | 0.18 |
| Yellow | 4 | 592           | 70  | KA2-2223 | 0.18 |
| Blue   | 4 | 470           | 220 | KA2-2224 | 0.18 |
| White  | 4 | <sup>1)</sup> | 350 | KA2-2225 | 0.18 |

**Note:** Care should be taken for DC supply where + and - must be correctly connected. This is marked X1 (+) and X2 (-) on the product.

Choose the same color on the LED as on the lamp cap.

<sup>1)</sup> X=0.31, Y=0.32 according to the ICI Chromaticity Diagram.



## Accessories

### LED and filament bulbs



LED bulbs

| Description                                      | Rated Current<br>mA | Wave-<br>length nm | Luminance<br>mcd | Catalog number | Weight<br>oz. |
|--------------------------------------------------|---------------------|--------------------|------------------|----------------|---------------|
| <b>LED bulbs continued</b>                       |                     |                    |                  |                |               |
| Rated voltage 230 V, AC/DC service life 25 000 h |                     |                    |                  |                |               |
| Red                                              | 4                   | 630                | 60               | KA2-2231       | 0.18          |
| Green                                            | 4                   | 525                | 500              | KA2-2232       | 0.18          |
| Yellow                                           | 4                   | 592                | 70               | KA2-2233       | 0.18          |
| Blue                                             | 4                   | 470                | 220              | KA2-2234       | 0.18          |
| White                                            | 4                   | <sup>1)</sup>      | 350              | KA2-2235       | 0.18          |

**Note:** Care should be taken for DC supply where + and - must be correctly connected. This is marked X1 (+) and X2 (-) on the product.

Choose the same color on the LED as on the lamp cap.

<sup>1)</sup> X=0.31, Y=0.32 according to the ICI Chromaticity Diagram.



Filament bulb

| Rated<br>voltage V               | Rated<br>current<br>mA | Rated<br>output<br>W | Ser-<br>vice life<br>h | Luminance<br>mcd | Catalog number | Weight<br>oz. |
|----------------------------------|------------------------|----------------------|------------------------|------------------|----------------|---------------|
| <b>Filament bulbs BA 9s base</b> |                        |                      |                        |                  |                |               |
| 6                                | 200                    | 1.2                  | 10 000                 | 350              | 5911 086-11    | 0.071         |
| 12                               | 100                    | 1.2                  | 10 000                 | 230              | 5911 086-12    | 0.071         |
| 24                               | 50                     | 1.2                  | 10 000                 | 280              | 5911 086-13    | 0.071         |
| 30                               | 40                     | 1.2                  | 10 000                 | 250              | 5911 086-4     | 0.071         |
| 48                               | 42                     | 2                    | 6 000                  | 500              | 5911 086-5     | 0.071         |
| 60                               | 20                     | 1.2                  | 5 000                  | 190              | 5911 086-14    | 0.071         |
| 110                              | 18                     | 2                    | 7 500                  | 250              | 5911 086-7     | 0.071         |
| 130                              | 15                     | 2                    | 7 500                  | 120              | 5911 086-15    | 0.071         |

**Note:** Catalog number of current: AC/DC. A Lamp Changing Tool is required for changing Bulb.

#### Lamp changing tool

|                            |          |       |
|----------------------------|----------|-------|
| For LED and filament bulbs | KA1-8072 | 0.071 |
|----------------------------|----------|-------|



Lamp changing tool

## Accessories



DIN-rail adaptor with pushbutton



Lamp changing tool



Mounting tool



Mounting tool for power tool



Protective cover



Bezels



Square bezels



Blanking plugs



Adaptor

| Description                                                                                                                                                                                     | Catalog number | Weight oz. |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------|
| <b>DIN-rail adaptor</b>                                                                                                                                                                         |                |            |
| DIN-rail adaptor                                                                                                                                                                                | CA1-8080       | 0.99       |
| Dummy block                                                                                                                                                                                     | MDB-2          | 0.11       |
| <b>Note:</b> Two dummy blocks are included with the DIN-rail Adaptor to make it possible to mount any Compact Device                                                                            |                |            |
| <b>Lamp changing tool</b>                                                                                                                                                                       |                |            |
| For LED bulbs and for bulbs                                                                                                                                                                     | KA1-8072       | 0.071      |
| <b>Mounting tool</b>                                                                                                                                                                            |                |            |
| Used for tightening the locking nut                                                                                                                                                             | MA1-8015       | 0.74       |
| Mounting tool for power tool                                                                                                                                                                    | MA1-8149       | 5.5        |
| <b>Membrane</b>                                                                                                                                                                                 |                |            |
| Flush button                                                                                                                                                                                    | KA1-8052       | 0.071      |
| Extended button                                                                                                                                                                                 | KA1-8002       | 0.071      |
| <b>Note:</b> Made of transparent, heat and cold resistant silicon rubber. Does not harden at low temperature. Remove the gasket when using membrane.                                            |                |            |
| <b>Protective ring</b>                                                                                                                                                                          |                |            |
| Protective ring                                                                                                                                                                                 | SK 615 512-1   | 0.071      |
| <b>Note:</b> For flush and extended pushbutton to prevent inadvertent operation. Cannot be used together with legend plate holder.                                                              |                |            |
| <b>Protective cover</b>                                                                                                                                                                         |                |            |
| Protective cover                                                                                                                                                                                | KA1-8010       | 0.28       |
| <b>Note:</b> For flush pushbutton. To prevent accidental operation. Cannot be used together with legend plate holder.                                                                           |                |            |
| <b>Button</b>                                                                                                                                                                                   |                |            |
| Grey, flush                                                                                                                                                                                     | KA1-8087       | 0.035      |
| Grey, extended                                                                                                                                                                                  | KA1-8097       | 0.035      |
| <b>Bezel</b>                                                                                                                                                                                    |                |            |
| <b>For pushbutton</b>                                                                                                                                                                           |                |            |
| Black                                                                                                                                                                                           | KA1-8022       | 0.071      |
| Metal                                                                                                                                                                                           | KA1-8021       | 0.53       |
| <b>For selector switch</b>                                                                                                                                                                      |                |            |
| Black                                                                                                                                                                                           | CA1-8077       | 0.035      |
| Metal                                                                                                                                                                                           | CA1-8078       | 0.35       |
| <b>Square bezel</b>                                                                                                                                                                             |                |            |
| Black, plastic                                                                                                                                                                                  | SK 616 016-2   | 0.035      |
| Grey, plastic                                                                                                                                                                                   | MA1-8124       | 0.035      |
| <b>Light diffusing lens</b>                                                                                                                                                                     |                |            |
| Light diffusing lens                                                                                                                                                                            | KA1-8005       | 0.035      |
| <b>Note:</b> To improve illumination. Cannot be used with text cap. The lens is used instead of text cap                                                                                        |                |            |
| <b>Blanking plug</b>                                                                                                                                                                            |                |            |
| Light grey                                                                                                                                                                                      | MA1-8136       | 0.18       |
| Grey                                                                                                                                                                                            | MA1-8129       | 0.18       |
| Black                                                                                                                                                                                           | MA1-8130       | 0.18       |
| <b>Adaptors 30 mm</b>                                                                                                                                                                           |                |            |
| Black plastic                                                                                                                                                                                   | KA1-8029       | 0.35       |
| Metal                                                                                                                                                                                           | KA1-8030       | 1.2        |
| <b>Note:</b> For use when fitting the 22 mm pilot devices in 30 mm mounting holes (1.5 - 4 mm panels). For use with pushbuttons, selector switches, emergency stop pushbutton and pilot lights. |                |            |
| <b>Adaptors</b>                                                                                                                                                                                 |                |            |
| For flush mounted pushbutton                                                                                                                                                                    | KA1-8073       | 1.8        |
| For flush mounted selector switches                                                                                                                                                             | CA1-8075       | 1.6        |
| <b>Extra key</b>                                                                                                                                                                                |                |            |
| Key code 71=Ronis 455                                                                                                                                                                           | SK 616 021-71  | 0.25       |

## Technical data

Pilot Devices  
Compact Range  
22mm

### Standards and approvals

|                    |                                                                                                                                                                        |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IEC / EN 60947-1   | Low-Voltage Switchgear and Controlgear - Part 1: General rules                                                                                                         |
| IEC / EN 60947-5-1 | Low-Voltage Switchgear and Controlgear - Part 5-1: Control circuit devices and switching elements - Electro-mechanical control circuit devices                         |
| IEC / EN 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 / EN 60073     | Basic and safety principles for man-machine interface, marking and identification - Coding principles for indicators and actuators                                     |
| IEC / 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                                    |
| DIN 40050-9        | Road vehicles; Degrees of Protection (IP-code); protection against foreign objects; water and contact; electrical equipment                                            |
| UL 508             | Industrial Control Equipment                                                                                                                                           |
| CSA C22.2 No 14    | Industrial Control Equipment                                                                                                                                           |

### Environmental data

#### Degrees of protection

| Pilot device:     | IEC/EN DIN           | UL/CSA                              |
|-------------------|----------------------|-------------------------------------|
| Pushbuttons       | IP66, IP67 and IP69K | Catalog number 1, 3R, 4, 4X, 12, 13 |
| Selector Switches | IP66, IP67 and IP69K | Catalog number 1, 3R, 4, 4X, 12, 13 |
| Pilot Lights      | IP66, IP67 and IP69K | Catalog number 1, 3R, 4, 4X, 12, 13 |
| Buzzers           | IP66, IP67 and IP69K | Catalog number 1, 3R, 4, 4X, 12, 13 |
| Emergency Stops   | IP66, IP67 and IP69K | Catalog number 1, 3R, 4, 4X, 12, 13 |
| Terminals         | IP20                 |                                     |

#### Temperature

|                                      |               |
|--------------------------------------|---------------|
| Ambient temperature during operation | -25 to +70 °C |
| Storage temperature                  | -40 to +85 °C |

### Technical data

#### Cable connections

| Operator                                        | Cable terminal                                                                                                                         |
|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Pushbutton<br>Selector Switch<br>Emergency Stop | Plus-minus Pozidriv No. 2<br>Connectable area:<br>min. 1 x 0.5 mm <sup>2</sup> / 1 x AWG22<br>max. 2 x 1.5 mm <sup>2</sup> / 2 x AWG14 |
| Pilot Light<br>Buzzer                           | Connectable area:<br>min. 1 x 0.5 mm <sup>2</sup> / 1 x AWG20<br>max. 2 x 2.5 mm <sup>2</sup> / 2 x AWG14                              |

#### Tightening torque

|                       |                         |
|-----------------------|-------------------------|
| Operators Locking Nut | Min. 2 Nm / Max. 2.3 Nm |
| Cable Terminals M3    | 0.8 Nm                  |
| Cable Terminals M3.5  | 0.9 Nm                  |

#### Short circuit protection

|                   |        |
|-------------------|--------|
| Max. fuse at 1 kA | gG 10A |
|-------------------|--------|

#### Mechanical life

|                                |                    |
|--------------------------------|--------------------|
| Pushbuttons, Selector Switches | 500 000 operations |
| Emergency Stop Pushbutton      | 50 000 operations  |

### Material

No ozone depleting substances in the products.

All front of panel plastic components are made of polycarbonate

|                  |                                                                                                                                            |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| PC Polycarbonate | High impact strength, good outdoor resistance. Chemical resistance (see table below)                                                       |
| 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 high 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.                                                                       |

#### Chemical resistance for polycarbonate

##### Chemical class

##### Effects

|                          |                                                                                                                                                                              |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Acids                    | No significant effect under most typical conditions of concentration and temperature                                                                                         |
| Alcohols and Alkalis     | Generally compatible at low concentration and room temperature. Higher concentrations and elevated temperatures can result in etching and attack evidenced by decomposition. |
| Aliphatic Hydrocarbons   | Generally compatible                                                                                                                                                         |
| Amines                   | Surface crystallization and chemical attack. Avoid.                                                                                                                          |
| Aromatic Hydrocarbons    | Partial solvents and severe stress cracking agents (i.e., xylene, toluene). Avoid.                                                                                           |
| Detergents and Cleaners  | Mild soap solutions are generally compatible. Strong alkaline materials should be avoided.                                                                                   |
| Esters                   | Cause severe crystallization. Partial solvents. Avoid.                                                                                                                       |
| Greases and Oils         | Pure petroleum Catalog numbers generally compatible. Many additives used with them are not.                                                                                  |
| Halogenated Hydrocarbons | Solvents. Avoid.                                                                                                                                                             |
| Ketones                  | Cause severe crystallization and stress cracking. Partial solvents. Avoid.                                                                                                   |
| Silicone Oil and Greases | Generally compatible up to 85 °C.                                                                                                                                            |

Please note that specified degree of protection is for operator mounted on panel. If other items are mounted in between, please make sure that they are correctly sealed.

## Technical data

### Electrical data

#### Contacts

#### Ratings as per IEC 60947-5-1

|                                                                 |                       |                |  |
|-----------------------------------------------------------------|-----------------------|----------------|--|
| Rated Insulation Voltage, $U_i$                                 |                       | 300 V          |  |
| Rated Thermal Current, $I_{th}$                                 |                       | 5 A            |  |
| Rated impulse withstand voltage $U_{imp}$                       |                       | 4 kV           |  |
| Rated frequency                                                 |                       | 50-60 Hz       |  |
| Sound level db                                                  |                       | >90 db         |  |
| Rated Operational Current, $I_o$<br>Utilization category AC-15  | at: 240 V             | 1 A            |  |
| Rated Operational Current, $I_o$<br>Utilization category DC-13, | at: 24 V<br>at: 125 V | 0.3 A<br>0.2 A |  |

#### Ratings as per UL, CSA, NEMA

|                           |                                                  |                 |                  |
|---------------------------|--------------------------------------------------|-----------------|------------------|
|                           |                                                  | C300 AC         | R300 DC          |
| Rated Insulation Voltage  |                                                  | 250 V           | 250 V            |
| Rated Thermal Current     |                                                  | 2.5 A           | 1 A              |
| Rated Operational Current | at: 120 V<br>at: 125 V<br>at: 240 V<br>at: 250 V | 1.5 A<br>0.75 A | 0.22 A<br>0.11 A |

#### Short circuit protection

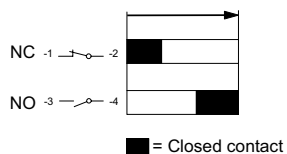
|                   |        |
|-------------------|--------|
| Max. fuse at 1 kA | gG 10A |
|-------------------|--------|

#### Minimum switching capacity

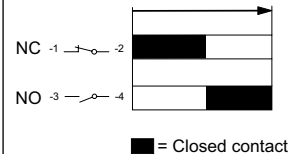
|        |      |
|--------|------|
| 5 V DC | 1 mA |
|--------|------|

#### Make-and-break contacts

##### Pushbutton



##### Emergency Stop Pushbutton



### LED Bulbs

Service Life for LED Bulbs means number of service hours until the brightness has been reduced down 50 %. Service Life 50 000 h

|                                |                                                                           |
|--------------------------------|---------------------------------------------------------------------------|
| Color of white LED             | x=0.31 Y=0.32 means the position of color in the ICI Chromaticity Diagram |
| Voltage Tolerance on LED Bulbs | -30 to +10 % Voltage is acceptable without affecting the Service Life     |
| Voltage Peaks on LED Bulbs     | Voltage peaks up to 1000 V Current peaks up to 500 mA during a few msec   |
| Glowing Light                  | All integrated LED Bulbs have a function built in to cut leakage currents |



### Large plastic enclosure (Modular & Compact)

This enclosure can fit both Modular and Compact operators with the unique possibility to mount up to 5 contact blocks assigned to one operator.

#### Protection degree:

IP 66

UL Type 1, 3R, 4, 4X, 12, 13

### Compact plastic enclosure

The compact enclosure is one of the smallest on the market intended for compact operators.

#### Protection degree:

IP 66, 67, 69K

UL Type 1, 3R, 4, 4X, 12, 13

### Assembled stations

We can also offer some of the most common assembled stations as a standard with combination from both Modular and Compact Range.

## Plastic enclosures Modular Range, 22mm

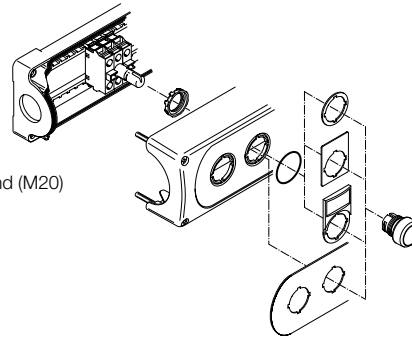


Empty enclosures  
1-seat - 6-seat

| Description                                                 |                      | Catalog number | Weight oz. |
|-------------------------------------------------------------|----------------------|----------------|------------|
| <b>Empty plastic enclosures with stainless steel screws</b> |                      |                |            |
| 1-seat                                                      | Dark grey/light grey | MEP1-0         | 5.3        |
| 1-seat                                                      | Yellow/light grey    | MEPY1-0        | 5.3        |
| 2-seat                                                      | Dark grey/light grey | MEP2-0         | 6.0        |
| 3-seat                                                      | Dark grey/light grey | MEP3-0         | 7.1        |
| 4-seat                                                      | Dark grey/light grey | MEP4-0         | 8.1        |
| 6-seat                                                      | Dark grey/light grey | MEP6-0         | 11         |

### When ordering

- Select operators
- Note: Select contact blocks and lamp blocks for rear mounting
- Accessories
  - N.B. One spacer per operator has to be ordered if legend plate is not used. (for rear mounted pilot devices)
- Holes for cable glands
  - 1-seat to 3-seat enclosures: M20 and Pg 13.5/Pg16 and (M20)
  - 4-seat and 6-seat enclosures: M25/Pg 16 and (M20)



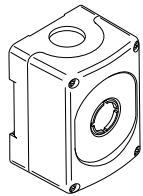
**UL Listed applications:** For end of line use only.

# Plastic enclosures, assembled stations

## 1, 2 & 3 seat, 22mm

### Modular range

#### 1-seat Plastic enclosures. Yellow top/light grey bottom

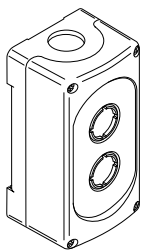


| Description |                           |         |         |         | Catalog No. |
|-------------|---------------------------|---------|---------|---------|-------------|
|             | Pos - 1                   | Pos - 2 | Pos - 3 | Pos - 4 |             |
| Type        | Twist Release 40mm E      | —       | —       | —       | P1-ES       |
| Color       | Stop                      | —       | —       | —       |             |
| Contacts    | Red                       | —       | —       | —       |             |
| Contacts    | 2 NC                      | —       | —       | —       |             |
| Name plate  | EMERGENCY STOP            | —       | —       | —       |             |
| Type        | III. Twist Release 40mm E | —       | —       | —       | P1-1ES      |
| Color       | 40mm E-Stop               | —       | —       | —       |             |
| Color       | Red, 120V filament        | —       | —       | —       |             |
| Contacts    | 2 NC, 1 LB                | —       | —       | —       |             |
| Name plate  | EMERGENCY STOP            | —       | —       | —       |             |

#### 1-seat Plastic enclosure, dark grey top/light grey bottom

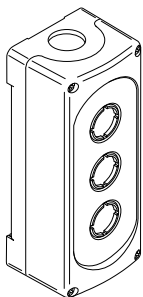
| Description |                 |         |         |         | Catalog No. |
|-------------|-----------------|---------|---------|---------|-------------|
|             | Pos - 1         | Pos - 2 | Pos - 3 | Pos - 4 |             |
| Type        | 3-pos sel. Main | —       | —       | —       | P1-HOA      |
| Color       | Black           | —       | —       | —       |             |
| Contacts    | 2 NO            | —       | —       | —       |             |
| Contacts    | 2 NO            | —       | —       | —       |             |
| Name plate  | HAND/OFF/AUTO   | —       | —       | —       |             |

#### 2-seat Plastic enclosure, dark grey top/light grey bottom



| Description |                  |                     |         |         | Catalog No. |
|-------------|------------------|---------------------|---------|---------|-------------|
|             | Pos - 1          | Pos - 2             | Pos - 3 | Pos - 4 |             |
| Type        | Button mom, Ext. | Button mom, Flush   | —       | —       | P2-SS       |
| Color       | Red              | Green               | —       | —       |             |
| Contacts    | 1 NC             | 1 NO                | —       | —       |             |
| Contacts    | 1 NC             | 1 NO                | —       | —       |             |
| Name plate  | STOP             | START               | —       | —       |             |
| Type        | 3-pos sel. Main  | Pilot Light         | —       | —       | P2-1HOARL   |
| Color       | Black            | Red                 | —       | —       |             |
| Contacts    | 2 NO             | 1 LB, 120V filament | —       | —       |             |
| Contacts    | 2 NO             | 1 LB, 120V filament | —       | —       |             |
| Name plate  | HAND/OFF/AUTO    | RUN                 | —       | —       |             |
| Type        | 2-pos sel. Main  | Pilot Light         | —       | —       | P2-100RL    |
| Color       | Black            | Red                 | —       | —       |             |
| Contacts    | 1 NO             | 1 LB, 120V filament | —       | —       |             |
| Contacts    | 1 NO             | 1 LB, 120V filament | —       | —       |             |
| Name plate  | ON/OFF           | RUN                 | —       | —       |             |

#### 3-seat Plastic enclosure, dark grey top/light grey bottom



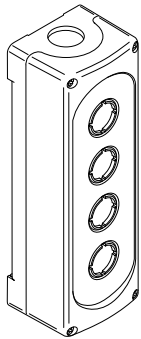
| Description |                           |                     |                     |         | Catalog No. |
|-------------|---------------------------|---------------------|---------------------|---------|-------------|
|             | Pos - 1                   | Pos - 2             | Pos - 3             | Pos - 4 |             |
| Type        | Button mom, Ext.          | Button mom, Flush   | Pilot Light         | —       | P3-1SSRL    |
| Color       | Red                       | Green               | Red                 | —       |             |
| Contacts    | 1 NC                      | 1 NO                | 1 LB, 120V filament | —       |             |
| Contacts    | 1 NC                      | 1 NO                | 1 LB, 120V filament | —       |             |
| Name plate  | STOP                      | START               | RUN                 | —       |             |
| Type        | 3-pos sel. Main           | Pilot Light         | Pilot Light         | —       | P3-1HOARLGL |
| Color       | Black                     | Red                 | Green               | —       |             |
| Contacts    | 2 NO                      | 1 LB, 120V filament | 1 LB, 120V filament | —       |             |
| Contacts    | 2 NO                      | 1 LB, 120V filament | 1 LB, 120V filament | —       |             |
| Name plate  | HAND/OFF/AUTO             | RUN                 | OFF                 | —       |             |
| Type        | 2-pos sel. Main           | Pilot Light         | Pilot Light         | —       | P3-100RLGL  |
| Color       | Black                     | Red                 | Green               | —       |             |
| Contacts    | 1 NO                      | 1 LB, 120V filament | 1 LB, 120V filament | —       |             |
| Contacts    | 1 NO                      | 1 LB, 120V filament | 1 LB, 120V filament | —       |             |
| Name plate  | ON/OFF                    | RUN                 | OFF                 | —       |             |
| Type        | 3-pos sel. Main           | Button mom, Flush   | Pilot Light         | —       | P3-1HOASRL  |
| Color       | Black                     | Green               | Red                 | —       |             |
| Contacts    | 2 NO                      | 1 NO                | 1 LB, 120V filament | —       |             |
| Contacts    | 2 NO                      | 1 NO                | 1 LB, 120V filament | —       |             |
| Name plate  | HAND/OFF/AUTO             | START               | RUN                 | —       |             |
| Type        | Twist Release 40mm E Stop | 3-pos sel. Main     | Pilot Light         | —       | P3-1ESHOARL |
| Color       | Red                       | Black               | Red                 | —       |             |
| Contacts    | 2 NC                      | 2 NO                | 1 LB, 120V filament | —       |             |
| Contacts    | 2 NC                      | 2 NO                | 1 LB, 120V filament | —       |             |
| Name plate  | EMERGENCY STOP            | HAND/OFF/AUTO       | RUN                 | —       |             |
| Type        | 5kOhm Pot                 | Stop                | Start               | —       | MEP3-SSPOT5 |
| Color       | Black                     | Red                 | Green               | —       |             |
| Contacts    | Leads                     | 1NO+1NC             | 1NO+1NC             | —       |             |
| Contacts    | Leads                     | 1NO+1NC             | 1NO+1NC             | —       |             |
| Name Plate  | Scale                     | (text cap)          | (text cap)          | —       |             |

## Plastic enclosures, assembled stations

### 4 seat

### Modular range

#### 4-seat Plastic enclosure, dark grey top/light grey bottom



← 4 Position  
← 3 Position  
← 2 Position  
← 1 Position

| Description |                           |                     |                     |                     | Catalog No.   |
|-------------|---------------------------|---------------------|---------------------|---------------------|---------------|
|             | Pos - 1                   | Pos - 2             | Pos - 3             | Pos - 4             |               |
| Type        | Button mom., Ext.         | Button mom., Flush  | Pilot Light         | Pilot Light         | P4-1SSRLGL    |
| Color       | Red                       | Green               | Green               | Red                 |               |
| Contacts    | 1 NC                      | 1 NO                | 1 LB, 120V filament | 1 LB, 120V filament |               |
| Name plate  | STOP                      | START               | OFF                 | RUN                 |               |
| Type        | 3-pos sel. Main           | Button mom., Flush  | Pilot Light         | Pilot Light         | P4-1HOASRLGL  |
| Color       | Black                     | Green               | Green               | Red                 |               |
| Contacts    | 2 NO                      | 1 NO                | 1 LB, 120V filament | 1 LB, 120V filament |               |
| Name plate  | HAND/OFF/AUTO             | START               | OFF                 | RUN                 |               |
| Type        | 3-pos sel. Main           | Pilot Light         | Pilot Light         | Pilot Light         | P4-1HOARLYLGL |
| Color       | Black                     | Green               | Yellow              | Red                 |               |
| Contacts    | 2 NO                      | 1 LB, 120V filament | 1 LB, 120V filament | 1 LB, 120V filament |               |
| Name plate  | HAND/OFF/AUTO             | OFF                 | FAULT               | RUN                 |               |
| Type        | 2-pos. sel. Main          | Pilot Light         | Pilot Light         | Pilot Light         | P4-1OORLYLGL  |
| Color       | Black                     | Green               | Yellow              | Red                 |               |
| Contacts    | 1 NO                      | 1 LB, 120V filament | 1 LB, 120V filament | 1 LB, 120V filament |               |
| Name plate  | ON/OFF                    | OFF                 | FAULT               | RUN                 |               |
| Type        | Twist Release 40mm E Stop | Button mom., Ext.   | Button mom., Flush  | Pilot Light         | P4-1ESSRL     |
| Color       | Red                       | Red                 | Green               | Red                 |               |
| Contacts    | 2 NC                      | 1 NC                | 1 NO                | 1 LB, 120V filament |               |
| Name plate  | EMERGENCY STOP            | STOP                | START               | RUN                 |               |
| Type        | Twist Release 40mm E Stop | 3-pos. sel. Main    | Pilot Light         | Pilot Light         | P4-1ESHOARLGL |
| Color       | Red                       | Black               | Green               | Red                 |               |
| Contacts    | 2 NC                      | 2 NO                | 1 LB, 120V filament | 1 LB, 120V filament |               |
| Name plate  | EMERGENCY STOP            | HAND/OFF/AUTO       | OFF                 | RUN                 |               |
| Type        | Twist Release 40mm E Stop | 2-pos sel. Main     | Pilot Light         | Pilot Light         | P4-1ESOORLGL  |
| Color       | Red                       | Black               | Green               | Red                 |               |
| Contacts    | 2 NC                      | 1 NO                | 1 LB, 120V filament | 1 LB, 120V filament |               |
| Name plate  | EMERGENCY STOP            | ON/OFF              | OFF                 | RUN                 |               |



## Plastic enclosures Compact Range E-Stop



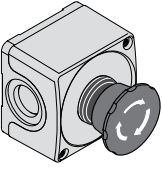
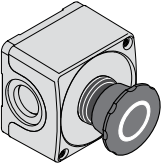
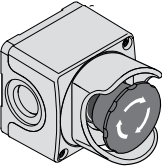
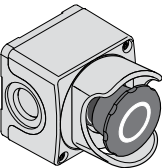
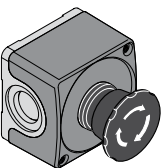
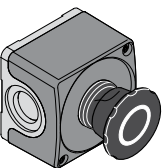
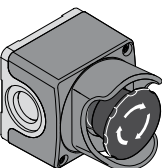
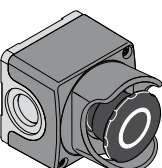
1-seat plastic enclosure for emergency stop pushbutton (yellow) and machine stops (grey)

| Description                                    | Catalog number | Weight oz. |
|------------------------------------------------|----------------|------------|
| <b>Enclosure for emergency stop pushbutton</b> |                |            |
| Yellow/light grey                              | CEPY1-0        | 2.5        |
| <b>Shroud</b>                                  |                |            |
| Yellow                                         | CA1-8053       | 0.56       |
| <b>Enclosure for machine stop pushbutton</b>   |                |            |
| Dark grey/light grey                           | CEP1-0         | 2.5        |
| <b>Shroud</b>                                  |                |            |
| Grey                                           | CA1-8054       | 0.56       |

Assembled stations - see page 7.65.

## Plastic assembled stations Compact E-Stop

### Assembled 1-seat emergency stop enclosures

|                                                                                     | Description                                                                    | Catalog Number |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|----------------|
|    | Emergency Stop Enclosure<br>Twist release; red button<br>2NC                   | CEPY1-1001     |
|                                                                                     | With aluminum legend plate                                                     | CEPY1-1001LP   |
|    | Emergency Stop Enclosure<br>Pull release; red button<br>2NC                    | CEPY1-1002     |
|                                                                                     | With aluminum legend plate                                                     | CEPY1-1002LP   |
|    | Emergency Stop Enclosure with Shroud<br>Twist release; red button<br>2NC       | CEPY1-2001     |
|   | Emergency Stop Enclosure with Shroud<br>Pull release; red button<br>2NC        | CEPY1-2002     |
|  | Machine Stop Enclosure<br>Twist release; black button<br>1NO + 1NC             | CEP1-1001      |
|  | Machine Stop Enclosure<br>Pull release; black button<br>1NO + 1NC              | CEP1-1002      |
|  | Machine Stop Enclosure with Shroud<br>Twist release; black button<br>1NO + 1NC | CEP1-2001      |
|  | Machine Stop Enclosure with Shroud<br>Pull release; black button<br>1NO + 1NC  | CEP1-2002      |

## Steel enclosures, empty

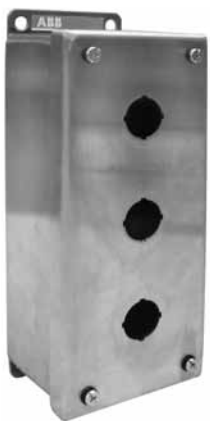
### 22mm



MEM121-0

UL Type 4 & 12, 0.075" carbon steel, ANSI-61 gray, 22mm

| Description | Height | Width | Depth | Catalog Number |
|-------------|--------|-------|-------|----------------|
| 1-hole      | 3.50   | 3.25  | 2.75  | MEM121-0       |
| 2-hole      | 5.75   | 3.25  | 2.75  | MEM122-0       |
| 3-hole      | 8.00   | 3.25  | 2.75  | MEM123-0       |
| 4-hole      | 10.25  | 3.25  | 2.75  | MEM124-0       |
| 6-hole, 2x3 | 9.50   | 6.25  | 3.00  | MEM126-0       |



MEMX3-0

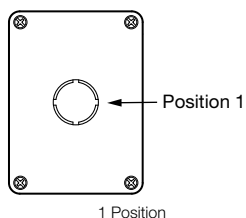
UL Type 4X, stainless steel, brushed finish, 22mm

| Description | Height | Width | Depth | Catalog Number |
|-------------|--------|-------|-------|----------------|
| 1-hole      | 3.50   | 3.25  | 2.75  | MEMX1-0        |
| 2-hole      | 5.75   | 3.25  | 2.75  | MEMX2-0        |
| 3-hole      | 8.00   | 3.25  | 2.75  | MEMX3-0        |
| 4-hole      | 10.25  | 3.25  | 2.75  | MEMX4-0        |
| 6-hole, 2x3 | 9.50   | 6.25  | 3.00  | MEMX6-0        |

## Steel enclosures, assembled stations

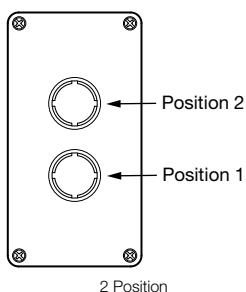
22mm

### 1-Seat Stations



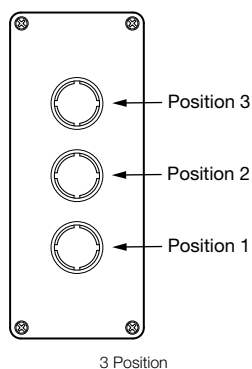
|                           |                      |       |       |       | Type 12        | Type 4X Stainless |
|---------------------------|----------------------|-------|-------|-------|----------------|-------------------|
|                           | Pos 1                | Pos 2 | Pos 3 | Pos 4 | Catalog Number | Catalog Number    |
| <b>E-STOP</b>             |                      |       |       |       |                |                   |
| Type                      | 40mm Twist           | -     | -     | -     | MEM121-ES      | MEMX1-ES          |
| Color                     | Red                  | -     | -     | -     |                |                   |
| Contacts                  | 2NC                  | -     | -     | -     |                |                   |
| Name Plate                | EMER. STOP           | -     | -     | -     |                |                   |
| <b>E-STOP Illuminated</b> |                      |       |       |       |                |                   |
| Type                      | 40mm Twist           | -     | -     | -     | MEM121-1ES     | MEMX1-1ES         |
| Color                     | Red Illumi-<br>nated | -     | -     | -     |                |                   |
| Contacts                  | 2NC                  | -     | -     | -     |                |                   |
| Lamp                      | 120V LED             | -     | -     | -     |                |                   |
| Name Plate                | EMER. STOP           | -     | -     | -     |                |                   |

### 2-Seat Stations



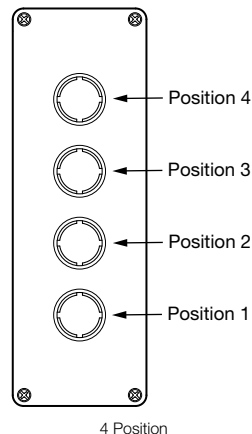
| Coast Stations        |               |             |       |       | Type 12        | Type 4X Stainless |
|-----------------------|---------------|-------------|-------|-------|----------------|-------------------|
|                       | Pos 1         | Pos 2       | Pos 3 | Pos 4 | Catalog Number | Catalog Number    |
| <b>START, STOP</b>    |               |             |       |       |                |                   |
| Type                  | Mom, extend.  | Mom, flush  | -     | -     | MEM122-SS      | MEMX2-SS          |
| Color                 | Red           | Green       | -     | -     |                |                   |
| Contacts              | 1NO + 1NC     | 1NO + 1NC   | -     | -     |                |                   |
| Name Plate            | STOP          | START       | -     | -     |                |                   |
| <b>HOA, RUN LIGHT</b> |               |             |       |       |                |                   |
| Type                  | 3-pos, maint. | Pilot light | -     | -     | MEM122-1HOARL  | MEMX2-1HOARL      |
| Color                 | Black         | Red         | -     | -     |                |                   |
| Contacts              | 2NO           | 120V LED    | -     | -     |                |                   |
| Name Plate            | Hand O Auto   | Run         | -     | -     |                |                   |

### 3-Seat Stations



|                               |              |              |             |       | Type 12        | Type 4X Stainless |
|-------------------------------|--------------|--------------|-------------|-------|----------------|-------------------|
|                               | Pos 1        | Pos 2        | Pos 3       | Pos 4 | Catalog Number | Catalog Number    |
| <b>START, STOP, RUN LIGHT</b> |              |              |             |       |                |                   |
| Type                          | Mom, extend. | Mom, flush   | Pilot light | -     | MEM123-1SSRL   | MEMX3-1SSRL       |
| Color                         | Red          | Green        | Red         | -     |                |                   |
| Contacts                      | 1NO + 1NC    | 1NO + 1NC    | 120V LED    | -     |                |                   |
| Name Plate                    | STOP         | START        | Run         | -     |                |                   |
| <b>START, STOP, E-STOP</b>    |              |              |             |       |                |                   |
| Type                          | 40mm Twist   | Mom, extend. | Mom, flush  | -     | MEM123-SSES    | MEMX3-SSES        |
| Color                         | Red          | Red          | Green       | -     |                |                   |
| Contacts                      | 2NC          | 1NO + 1NC    | 1NO + 1NC   | -     |                |                   |
| Name Plate                    | EMER. STOP   | STOP         | START       | -     |                |                   |

### 4-Seat Stations



|                                       | Pos 1      | Pos 2        | Pos 3      | Pos 4       | Type 12<br>Catalog Number | Type 4X Stainless<br>Catalog Number |
|---------------------------------------|------------|--------------|------------|-------------|---------------------------|-------------------------------------|
| <b>START, STOP, E-STOP, RUN LIGHT</b> |            |              |            |             |                           |                                     |
| Type                                  | 40mm Twist | Mom, extend. | Mom, flush | Pilot light | MEM124-1ESSRL             | MEMX4-1ESSRL                        |
| Color                                 | Red        | Red          | Green      | Red         |                           |                                     |
| Contacts                              | 2NC        | 1NO + 1NC    | 1NO + 1NC  | 120V LED    |                           |                                     |
| Name Plate                            | EMER. STOP | STOP         | START      | Run         |                           |                                     |

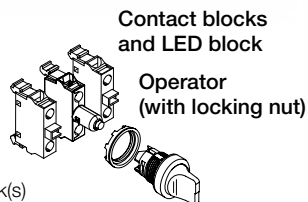
## Two position selector switches for vertically mounted enclosures

### How to order non-illuminated:

- Alt.1 • Operator**  
+ Holder  
+ Contact block(s)
- Alt.2 • Operator**  
+ Holder with Contact block(s)

### How to order illuminated:

- Alt.1 • Operator**  
+ Holder  
+ Contact block(s)  
+ LED/lamp block
- Alt.2 • Operator**  
+ Holder with Contact block(s)  
and lamp block



NOTE: For contact blocks & LED lamp blocks, see Accessories pages 7.113 - 7.115.

### Bezel - How to order

Black plastic - Standard  
Chrome metal - Replace '1' with '3' in  
Catalog number

| Bezel options | Catalog number |
|---------------|----------------|
| Black plastic | M2SSVX-1XX     |
| Chrome metal  | M2SSVX-3XX     |



Two-position selector switch  
non-illuminated

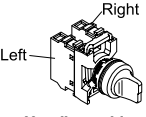


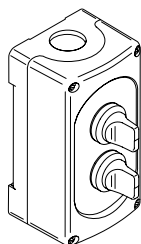
Two-position selector switch  
illuminated

### Operator: Two-position Selector Switch

| Description                                                                                | Catalog number | Weight<br>oz. |
|--------------------------------------------------------------------------------------------|----------------|---------------|
| <b>Short handle, non-illuminated</b>                                                       |                |               |
| <b>Maintained</b>                                                                          |                |               |
|  Red      | M2SSV1-10R     | 0.53          |
|  Black    | M2SSV1-10B     | 0.53          |
| <b>Maintained</b>                                                                          |                |               |
|  Red      | M2SSV2-10R     | 0.53          |
|  Black    | M2SSV2-10B     | 0.53          |
| <b>Momentary, spring return from C to B</b>                                                |                |               |
|  Red     | M2SSV3-10R     | 0.53          |
|  Black   | M2SSV3-10B     | 0.53          |
| <b>Short handle, illuminated</b>                                                           |                |               |
| <b>Maintained</b>                                                                          |                |               |
|  Red    | M2SSV1-11R     | 0.53          |
|  Green  | M2SSV1-11G     | 0.53          |
|  Yellow | M2SSV1-11Y     | 0.53          |
| <b>Maintained</b>                                                                          |                |               |
|  Red    | M2SSV2-11R     | 0.53          |
|  Green  | M2SSV2-11G     | 0.53          |
|  Yellow | M2SSV2-11Y     | 0.53          |
| <b>Momentary, spring return from C to B</b>                                                |                |               |
|  Red    | M2SSV3-11R     | 0.53          |
|  Green  | M2SSV3-11G     | 0.53          |
|  Yellow | M2SSV3-11Y     | 0.53          |

### Contacts actuated

|                                                                                     |   |                                     |                                     |
|-------------------------------------------------------------------------------------|---|-------------------------------------|-------------------------------------|
|  |   | Left                                | Right                               |
| <b>Handle position</b>                                                              |   | <b>Left block</b>                   | <b>Right block</b>                  |
|  | B | <input type="checkbox"/>            | <input type="checkbox"/>            |
|  | A | <input type="checkbox"/>            | <input type="checkbox"/>            |
|  | C | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> Not actuated                                               |   |                                     |                                     |
| <input checked="" type="checkbox"/> Actuated                                        |   |                                     |                                     |



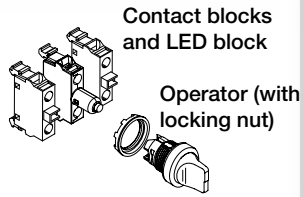
Enclosure with selector switches

## Three position selector switches for vertically mounted enclosures

### How to order:

**Alt.1** • Operator  
+ Contact blocks for rear mounting

**Alt.2** • Operator  
+ Contact blocks and lamp block  
for rear mounting



NOTE: For contact blocks & LED lamp blocks, see Accessories pages 7.111 - 7.113.

### Bezel - How to order

Black plastic - Standard  
Chrome metal - Replace '1' with '3' in  
Catalog number



| Bezel options | Catalog number |
|---------------|----------------|
| Black Plastic | M3SSVX-1XX     |
| Chrome Metal  | M3SSVX-3XX     |

7



Three-position selector switch  
non-illuminated

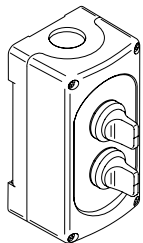


Three-position selector switch  
illuminated

### Operator: Three-position selector switch

| Description                                                 | Catalog number | Weight<br>oz. |
|-------------------------------------------------------------|----------------|---------------|
| <b>Short Handle, non-illuminated</b>                        |                |               |
| <b>Maintained</b>                                           |                |               |
| Red                                                         | M3SSV1-10R     | 0.53          |
| Black                                                       | M3SSV1-10B     | 0.53          |
| <b>Momentary, spring return from A to B and from C to B</b> |                |               |
| Red                                                         | M3SSV2-10R     | 0.53          |
| Black                                                       | M3SSV2-10B     | 0.53          |
| <b>Momentary, spring return from C to B</b>                 |                |               |
| Red                                                         | M3SSV3-10R     | 0.53          |
| Black                                                       | M3SSV3-10B     | 0.53          |
| <b>Short handle, illuminated</b>                            |                |               |
| <b>Maintained</b>                                           |                |               |
| Red                                                         | M3SSV1-11R     | 0.53          |
| Green                                                       | M3SSV1-11G     | 0.53          |
| Yellow                                                      | M3SSV1-11Y     | 0.53          |
| <b>Momentary, spring return from A to B and from C to B</b> |                |               |
| Red                                                         | M3SSV2-11R     | 0.53          |
| Green                                                       | M3SSV2-11G     | 0.53          |
| Yellow                                                      | M3SSV2-11Y     | 0.53          |
| <b>Momentary, spring return from C to B</b>                 |                |               |
| Red                                                         | M3SSV3-11R     | 0.53          |
| Green                                                       | M3SSV3-11G     | 0.53          |
| Yellow                                                      | M3SSV3-11Y     | 0.53          |

**Note:** No contact in center position. Lamp block for max 230 V AC/DC. Bulb not included.  
Other lamp block see accessories



Enclosure with selector switches

### Contacts actuated

| Right           |   |                                       |                                              |
|-----------------|---|---------------------------------------|----------------------------------------------|
| Left            |   |                                       |                                              |
| Handle position |   | Left block                            | Right block                                  |
| A               | A | <input checked="" type="checkbox"/>   | <input type="checkbox"/>                     |
| B               | B | <input type="checkbox"/>              | <input type="checkbox"/>                     |
| C               | C | <input type="checkbox"/>              | <input checked="" type="checkbox"/>          |
|                 |   | <input type="checkbox"/> Not actuated | <input checked="" type="checkbox"/> Actuated |

## LED Blocks for rear mounting



LED block with built in leakage  
current protection

| Description                                      | Rated<br>Current mA | Wavelength<br>nm | Luminance<br>mod | Catalog<br>number | Weight<br>oz. |
|--------------------------------------------------|---------------------|------------------|------------------|-------------------|---------------|
| <b>LED blocks</b>                                |                     |                  |                  |                   |               |
| <b>Rated voltage 12 V, DC <sup>1)</sup></b>      |                     |                  |                  |                   |               |
| Red                                              | 12.0                | 620              | 320              | MLBL-00BR         | 0.42          |
| Green                                            | 9.3                 | 520              | 1500             | MLBL-00BG         | 0.42          |
| Yellow                                           | 12.0                | 588              | 380              | MLBL-00BY         | 0.42          |
| Blue                                             | 9.5                 | 468              | 450              | MLBL-00BL         | 0.42          |
| White                                            | 9.3                 | <sup>2)</sup>    | 600              | MLBL-00BW         | 0.42          |
| <b>Rated voltage 24 V, AC/DC <sup>1)</sup></b>   |                     |                  |                  |                   |               |
| Red                                              | 9.9                 | 620              | 250              | MLBL-01BR         | 0.42          |
| Green                                            | 9.2                 | 520              | 1500             | MLBL-01BG         | 0.42          |
| Yellow                                           | 9.9                 | 588              | 250              | MLBL-01BY         | 0.42          |
| Blue                                             | 9.3                 | 468              | 450              | MLBL-01BL         | 0.42          |
| White                                            | 9.2                 | <sup>2)</sup>    | 600              | MLBL-01BW         | 0.42          |
| <b>Rated voltage 48 V, AC/DC <sup>1)</sup></b>   |                     |                  |                  |                   |               |
| Red                                              | 10.0                | 620              | 260              | MLBL-02BR         | 0.42          |
| Green                                            | 9.7                 | 520              | 1500             | MLBL-02BG         | 0.42          |
| Yellow                                           | 10.0                | 588              | 300              | MLBL-02BY         | 0.42          |
| Blue                                             | 9.7                 | 468              | 450              | MLBL-02BL         | 0.42          |
| White                                            | 9.7                 | <sup>2)</sup>    | 600              | MLBL-02BW         | 0.42          |
| <b>Rated voltage 60 V, AC/DC <sup>1)</sup></b>   |                     |                  |                  |                   |               |
| Red                                              | 13.0                | 620              | 350              | MLBL-03BR         | 0.42          |
| Green                                            | 12.7                | 520              | 2000             | MLBL-03BG         | 0.42          |
| Yellow                                           | 13.0                | 588              | 400              | MLBL-03BY         | 0.42          |
| Blue                                             | 12.7                | 468              | 550              | MLBL-03BL         | 0.42          |
| White                                            | 12.7                | <sup>2)</sup>    | 750              | MLBL-03BW         | 0.42          |
| <b>Rated voltage 110-130 V, AC</b>               |                     |                  |                  |                   |               |
| Red                                              | 8.6                 | 620              | 200              | MLBL-04BR         | 0.42          |
| Green                                            | 8.5                 | 520              | 1200             | MLBL-04BG         | 0.42          |
| Yellow                                           | 8.6                 | 588              | 250              | MLBL-04BY         | 0.42          |
| Blue                                             | 7.0                 | 468              | 400              | MLBL-04BL         | 0.42          |
| White                                            | 7.0                 | <sup>2)</sup>    | 500              | MLBL-04BW         | 0.42          |
| <b>Rated voltage 110-130 V, DC <sup>1)</sup></b> |                     |                  |                  |                   |               |
| Red                                              | 9.9                 | 620              | 250              | MLBL-05BR         | 0.42          |
| Green                                            | 9.8                 | 520              | 1500             | MLBL-05BG         | 0.42          |
| Yellow                                           | 9.9                 | 588              | 300              | MLBL-05BY         | 0.42          |
| Blue                                             | 9.8                 | 468              | 450              | MLBL-05BL         | 0.42          |
| White                                            | 9.8                 | <sup>2)</sup>    | 600              | MLBL-05BW         | 0.42          |
| <b>Rated voltage 220 V, DC <sup>1)</sup></b>     |                     |                  |                  |                   |               |
| Red                                              | 8.0                 | 620              | 180              | MLBL-06BR         | 0.42          |
| Green                                            | 8.0                 | 520              | 110              | MLBL-06BG         | 0.42          |
| Yellow                                           | 8.0                 | 588              | 200              | MLBL-06BY         | 0.42          |
| Blue                                             | 8.0                 | 468              | 450              | MLBL-06BL         | 0.42          |
| White                                            | 8.0                 | <sup>2)</sup>    | 600              | MLBL-06BW         | 0.42          |
| <b>Rated voltage 230 V, AC</b>                   |                     |                  |                  |                   |               |
| Red                                              | 9.5                 | 620              | 250              | MLBL-07BR         | 0.42          |
| Green                                            | 9.4                 | 520              | 1500             | MLBL-07BG         | 0.42          |
| Yellow                                           | 9.5                 | 588              | 300              | MLBL-07BY         | 0.42          |
| Blue                                             | 8.2                 | 468              | 450              | MLBL-07BL         | 0.42          |
| White                                            | 8.2                 | <sup>2)</sup>    | 600              | MLBL-07BW         | 0.42          |

**Note:** <sup>1)</sup> Care should be taken for DC supply where + and - must be correctly connected. This is marked X1 (+) and X2 (-) on the product.

<sup>2)</sup> X=0.31, Y=0.32 according to the ICI Chromaticity Diagram.

## LED Blocks for rear mounting



LED block with built in leakage  
current protection

| Description             | Rated<br>current mA | Wavelength<br>nm | Luminance<br>mcd | Catalog<br>number | Weight<br>oz. |
|-------------------------|---------------------|------------------|------------------|-------------------|---------------|
| <b>Cont. LED blocks</b> |                     |                  |                  |                   |               |
| Rated voltage 380 V, AC |                     |                  |                  |                   |               |
| Red                     | 10.2                | 620              | 250              | MLBL-08BR         | 0.42          |
| Green                   | 10.2                | 520              | 1500             | MLBL-08BG         | 0.42          |
| Yellow                  | 10.2                | 582              | 300              | MLBL-08BY         | 0.42          |
| Blue                    | 9.1                 | 468              | 450              | MLBL-08BL         | 0.42          |
| White                   | 9.1                 | <sup>2)</sup>    | 600              | MLBL-08BW         | 0.42          |
| Rated voltage 415 V, AC |                     |                  |                  |                   |               |
| Red                     | 11.2                | 620              | 280              | MLBL-09BR         | 0.42          |
| Green                   | 11.2                | 520              | 1800             | MLBL-09BG         | 0.42          |
| Yellow                  | 11.2                | 588              | 350              | MLBL-09BY         | 0.42          |
| Blue                    | 9.9                 | 468              | 500              | MLBL-09BL         | 0.42          |
| White                   | 9.9                 | <sup>2)</sup>    | 650              | MLBL-09BW         | 0.42          |

<sup>2)</sup> X=0.31, Y=0.32 according to the ICI Chromaticity Diagram.



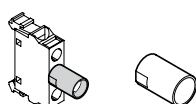
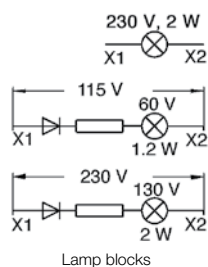
## Accessories for plastic enclosures



Contact block



Double contact block



Protective sleeve



Cable gland



Sealing ring



Blanking plugs

| Description                                                                                                           | Catalog number | Weight oz. |
|-----------------------------------------------------------------------------------------------------------------------|----------------|------------|
| <b>Contact block for rear mounting</b>                                                                                |                |            |
| 1NO                                                                                                                   | MCB-10B        | 0.46       |
| 1NC                                                                                                                   | MCB-01B        | 0.46       |
| <b>Double contact block</b>                                                                                           |                |            |
| 2NO                                                                                                                   | MCB-20B        | 0.92       |
| 2NC                                                                                                                   | MCB-02B        | 0.92       |
| 1NO+1NC                                                                                                               | MCB-11B        | 0.92       |
| <b>Contact block with gold plated contacts</b>                                                                        |                |            |
| 1NO                                                                                                                   | MCB-10BG       | 0.46       |
| 1NC                                                                                                                   | MCB-01BG       | 0.46       |
| <b>Lamp block for rear mounting</b>                                                                                   |                |            |
| For max. 2 W, 230 V AC and DC Filament Bulb or LED                                                                    | MLB-1B         | 0.53       |
| 115 V AC supply voltage. For 60 V Filament Bulb 1.2 W                                                                 | MLB-2B         | 0.60       |
| 230 V AC supply voltage. For 130 V Filament Bulb 2 W                                                                  | MLB-3B         | 0.71       |
| <b>Protective sleeve</b>                                                                                              |                |            |
| Protective sleeve                                                                                                     | 5396 0543-1    | 0.071      |
| <b>Note:</b> To make a rear mounted lamp block screen protected. IP20 (Not together with illuminated selector switch) |                |            |
| <b>Cable gland</b>                                                                                                    |                |            |
| Grey plastic. Threaded outer sleeve sealing ring included.                                                            |                |            |
| M25                                                                                                                   | MA5-3001       | 0.53       |
| M20                                                                                                                   | MA5-3002       | 0.53       |
| PG 13.5                                                                                                               | MA5-3006       | 0.35       |
| PG 16                                                                                                                 | MA5-3007       | 0.53       |
| <b>Nut</b>                                                                                                            |                |            |
| Grey plastic. For cable gland above.                                                                                  |                |            |
| M25                                                                                                                   | MA5-3003       | 0.18       |
| M20                                                                                                                   | MA5-3004       | 0.18       |
| PG 13.5                                                                                                               | MA5-3008       | 0.035      |
| PG 16                                                                                                                 | MA5-3009       | 0.035      |
| <b>Earthing Terminal</b>                                                                                              |                |            |
| For Plastic Enclosure.                                                                                                | MA5-3005       | 0.18       |
| <b>Sealing ring</b>                                                                                                   |                |            |
| For plastic enclosure.                                                                                                | MA1-8150       | 0.035      |
| <b>Spacer</b>                                                                                                         |                |            |
| 1 mm thick. Needed when legend plates are not used in plastic enclosures.                                             |                |            |
| Spacer                                                                                                                | SK 615 516-1   | 0.071      |
| Spacer for modular emergency stop pushbutton                                                                          | KA1-8045       | 0.14       |
| <b>Blanking plug</b>                                                                                                  |                |            |
| Grey, 22mm                                                                                                            | MA1-8129       | 0.18       |
| Black, 22mm                                                                                                           | MA1-8130       | 0.18       |
| Black, 30mm                                                                                                           | MA1-8133       | 0.18       |
| Light grey, 22mm                                                                                                      | MA1-8136       | 0.18       |
| <b>Adaptor</b>                                                                                                        |                |            |
| PG 16/M20                                                                                                             | MA5-3010       | 0.35       |



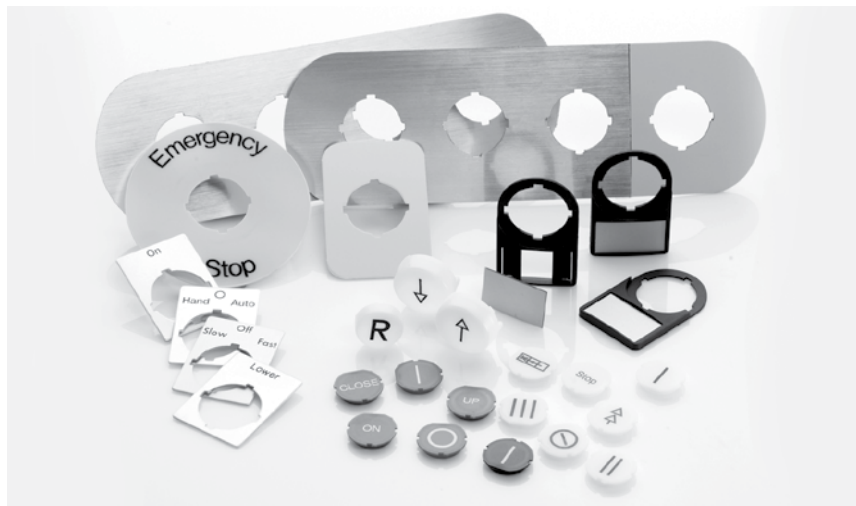
22mm

# Legend plates

**ABB**

Legend plates

22mm



## Fixed legend plates

- Of silvergrey anodized aluminum for:
  - pushbuttons
  - two-position selector switches
  - three-position selector switches
  - toggle switches
  - customer selected text

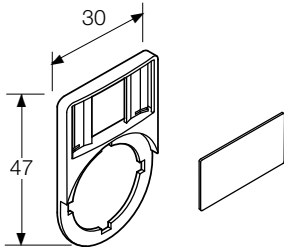
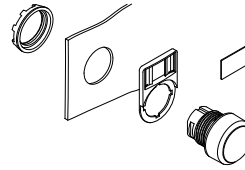
## Special legend plates

- For emergency stop pushbuttons
- Legend plate with or without customer selected text
- Legend plate holders with inserts of anodized brushed aluminum with or without text or symbol for:
  - pushbuttons
  - two-position selector switch
  - three position selector switch
  - customer selected text
- For plastic enclosures:
  - Legend plate holders with inserts of anodized brushed aluminum on black plastic. With or without text or symbol for push-buttons
  - Legend plates of silvergrey anodized aluminum. For 1- 2-, 3- 4- or 6-seat plastic enclosures

## Special legend plates 22mm

### Legend plate holders with inserts

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



### Legend plate holder (black) for panel mounting

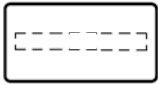
| Description | Catalog number  |
|-------------|-----------------|
| Black       | 1SFA616920R8120 |

### Inserts

| Description                                                    | Catalog number  |
|----------------------------------------------------------------|-----------------|
| Of brushed aluminum on black plastic<br>Without text or symbol | 1SFA616920R8121 |

### Inserts with text/symbol

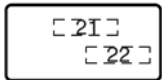
| Description                                                        | Catalog number  |
|--------------------------------------------------------------------|-----------------|
| Of brushed aluminum on black plastic<br><u>With text or symbol</u> |                 |
| O                                                                  | 1SFA611930R1032 |
| I                                                                  | 1SFA611930R1033 |
| →                                                                  | 1SFA611930R1034 |
| →→                                                                 | 1SFA611930R1035 |
| Close                                                              | 1SFA611930R1036 |
| Open                                                               | 1SFA611930R1037 |
| On                                                                 | 1SFA611930R1038 |
| Off                                                                | 1SFA611930R1039 |
| Fast                                                               | 1SFA611930R1040 |
| Slow                                                               | 1SFA611930R1041 |
| Down                                                               | 1SFA611930R1042 |
| Up                                                                 | 1SFA611930R1043 |
| Start                                                              | 1SFA611930R1044 |
| Stop                                                               | 1SFA611930R1045 |



### Inserts for two-position selector switches

Of brushed aluminum on black plastic. Text on both sides.

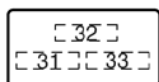
| Description                | Catalog number  |
|----------------------------|-----------------|
| <u>With text or symbol</u> |                 |
| Pos. 21    Pos. 22         |                 |
| O            I             | 1SFA611930R1070 |
| I            II            | 1SFA611930R1071 |
| →           →→             | 1SFA611930R1072 |
| Off          On            | 1SFA611930R1073 |
| Stop        Start          | 1SFA611930R1074 |
| Low         High           | 1SFA611930R1075 |
| Slow        Fast           | 1SFA611930R1076 |
| Close       Open           | 1SFA611930R1077 |
| Jog          Run           | 1SFA611930R1078 |
| Hand        Auto           | 1SFA611930R1079 |



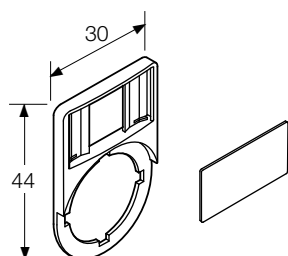
For two-position selector switch

## Special legend plates

22mm



For three-position selector switch



### Inserts for three-position selector switches

Of brushed aluminum on black plastic. Text on both sides.

| Description                |         |         | Catalog number  |
|----------------------------|---------|---------|-----------------|
| <u>With text or symbol</u> |         |         |                 |
| Pos. 31                    | Pos. 32 | Pos. 33 |                 |
| ←                          | O       | →       | 1SFA611930R1080 |
| →                          | O       | →→      | 1SFA611930R1081 |
| I                          | O       | II      | 1SFA611930R1082 |
| Hand                       | O       | Auto    | 1SFA611930R1083 |
| Slow                       | Off     | Fast    | 1SFA611930R1084 |

### Legend plate holder (grey) for plastic enclosures

| Description | Catalog number  |
|-------------|-----------------|
| Grey        | 1SFA611930R1060 |

### Inserts

| Description                          | Catalog number  |
|--------------------------------------|-----------------|
| Of brushed aluminum on black plastic |                 |
| Without text or symbol               | 1SFA611930R1061 |

### Inserts with text/symbol

| Description                          | Catalog number  |
|--------------------------------------|-----------------|
| Of brushed aluminum on black plastic |                 |
| <u>With text or symbol</u>           |                 |
| O                                    | 1SFA611930R1062 |
| I                                    | 1SFA611930R1063 |
| II                                   | 1SFA611930R1064 |

## Special legend plates Emergency stops 22mm

### Emergency stop legend plates, 70mm, for modular enclosures ①



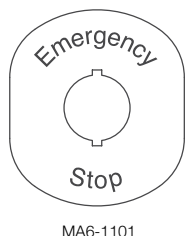
| Description/Text                                                                             | Catalog number               |
|----------------------------------------------------------------------------------------------|------------------------------|
| Black text on a yellow aluminum plate.<br>Emergency Stop<br>Without text                     | SK 615 546-2<br>SK 615 546-8 |
| Black text on a yellow plastic plate.<br>Can be used as yellow background.<br>Emergency Stop | 1SFA616915R1005              |

### Emergency stop legend plates, 60mm, for Compact enclosures



| Description/Text                    | Catalog number |
|-------------------------------------|----------------|
| Legend plate, yellow aluminum, 60mm | CA6-1026       |

### Emergency stop legend plates for Modular enclosures

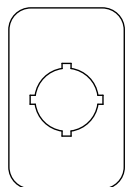


| Description/Text                                                                              | Catalog number |
|-----------------------------------------------------------------------------------------------|----------------|
| For horizontally mounted enclosures with yellow plastic/black text                            | MA6-1026       |
| UL Type 3/3R, 4, 4X, 12<br>For horizontally mounted enclosures with yellow plastic/black text | ELP22-1101     |
| For vertically mounted enclosures with yellow plastic/black text                              | MA6-1101       |



### Emergency stop legend plate

| Description/Text                                                    | Catalog number  |
|---------------------------------------------------------------------|-----------------|
| Black text on a yellow aluminum plate.<br>Legend plate without text | 1SFA611930R1010 |
| Legend plate (1SFA 611 930 R1010) with text:<br>Emergency Stop      | 1SFA611930R1019 |
| Black text on a yellow plastic plate.<br>Legend plate without text  | 1SFA611930R1011 |
| Legend plate (1SFA 611 930 R1011) with text:<br>Emergency Stop      | 1SFA611930R1023 |



① Does not work with pushbutton enclosure.

② Quantity per package: 10.

③ When ordering, please state text and position (Line 21 and Line 22). Only the initial character is upper case unless other is stated. Quantity per package: 1.

# Legend plates for pushbuttons 22mm

## 22mm Blank fixed legend plates

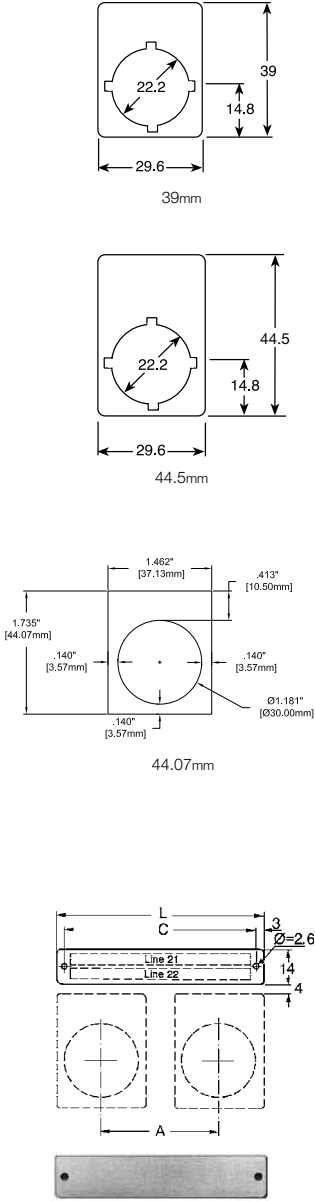
Of silvergrey aluminum

| Size                                  | Catalog number |
|---------------------------------------|----------------|
| 39mm H                                | SK 615 540-1   |
| 44.5mm H                              | SK 615 541-1   |
| 44.07 mm H (UL Type 3/3R, 4, 4X & 12) | LP22-2000      |

## 22mm Engraved fixed legend plates, with text ①

Of silvergrey aluminum

| Text           | Catalog number |
|----------------|----------------|
| <b>English</b> |                |
| Close          | SK 615 552-13  |
| Down           | SK 615 552-14  |
| Emergency stop | SK 615 552-15  |
| Fast           | SK 615 552-16  |
| Forward        | SK 615 552-17  |
| In             | SK 615 550-29  |
| Inching        | SK 615 552-18  |
| Jog            | SK 615 552-JO  |
| Left           | SK 615 552-39  |
| Lower          | SK 615 552-20  |
| Off            | SK 615 552-21  |
| On             | SK 615 552-22  |
| Open           | SK 615 552-23  |
| Out            | SK 615 552-24  |
| Raise          | SK 615 552-25  |
| Reset          | SK 615 552-27  |
| Reverse        | SK 615 552-28  |
| Right          | SK 615 552-40  |
| Run            | SK 615 552-29  |
| Slow           | SK 615 552-30  |
| Start          | SK 615 550-44  |
| Stop           | SK 615 552-31  |
| Up             | SK 615 552-32  |



## Legend plates without or with customer-selected text

Of aluminum

| Number of operations | Max number of characters per line | Dimensions |      |      | Without text<br>Catalog number |
|----------------------|-----------------------------------|------------|------|------|--------------------------------|
|                      |                                   | A          | L    | C    |                                |
| 1                    | 7                                 | -          | 29.6 | 23.6 | SK 615 545-1                   |
| 2                    | 20                                | 30.5       | 60   | 54   | SK 615 545-2                   |
| 2                    | 24                                | 40         | 70   | 64   | SK 615 545-3                   |
| 3                    | 33                                | 30.5       | 90   | 84   | SK 615 545-4                   |
| 3                    | 42                                | 40         | 110  | 104  | SK 615 545-5                   |

① Text height 3 mm.

## Engraved legend plate form

Special legend plates  
22mm

ENGRAVED LEGEND PLATE FORM

PAGE: \_\_\_\_ OF: \_\_\_\_

ORDER DATE: \_\_\_\_\_

ORDER NUMBER: \_\_\_\_\_

ISSUED BY: \_\_\_\_\_

ORDER QTY: \_\_\_\_\_

ALL CAPITALS?    YES            NO

SHIPPING METHOD: \_\_\_\_\_

REMARKS: \_\_\_\_\_

DUE DATE: \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_

To be completed by ABB personnel:

ENGRAVER: \_\_\_\_\_

Q.C. INSPECTION: \_\_\_\_\_

### PRINT INFORMATION TO BE ENGRAVED

MAX 7  
CHARAC-  
TERS PER  
LINE

SK 615 545-1

SK 615 545-2

MAXIMUM OF 20  
CHARACTERS PER LINE

SK 615 545-3

MAXIMUM OF 24  
CHARACTERS PER LINE

SK 615 545-4

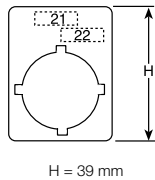
MAXIMUM OF 33  
CHARACTERS PER LINE

SK 615 545-5

MAXIMUM OF 44  
CHARACTERS PER LINE



## Legend plates for two position selector switches 22mm



### Engraved fixed legend plates, with symbols ①

Of silvergrey aluminum

| Symbol/Text |         | Catalog number |
|-------------|---------|----------------|
| Pos 21      | Pos. 22 |                |
| O           | I       | SK 615 550-75  |
| I           | II      | SK 615 550-76  |
| →           | →→      | SK 615 562-72  |

### Engraved fixed legend plates, with text ①

Of silvergrey aluminum

| Symbol/Text |         | Catalog number |
|-------------|---------|----------------|
| Pos 21      | Pos. 22 |                |
| English     |         |                |
| Hand        | Auto    | SK 615 550-71  |
| Jog         | Run     | SK 615 552-52  |
| Off         | On      | SK 615 552-53  |
| Stop        | Start   | SK 615 552-55  |

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

## Legend plates for three position selector switches 22mm

### Engraved fixed legend plates, with symbols ①

Of silvergrey aluminum

Symbol/Text

| Pos. 31 | Pos. 32 | Pos. 33 | Catalog number |
|---------|---------|---------|----------------|
| I       | O       | II      | SK 615 550-81  |
| ←       | O       | →       | SK 615 562-82  |
| →       | O       | →→      | SK 615 562-83  |

### Engraved fixed legend plates, with text ①

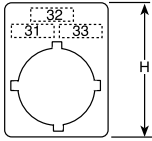
Of silvergrey aluminum

Symbol/Text

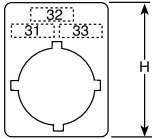
| Pos. 31 | Pos. 32 | Pos. 33 | Catalog number |
|---------|---------|---------|----------------|
| English |         |         |                |
| Hand    | O       | Auto    | SK 615 550-80  |
| Slow    | Off     | Fast    | SK 615 552-60  |

### Aluminum name plate blank (anodized silvergray aluminum)

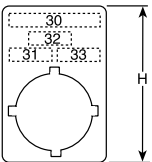
|       |        |              |
|-------|--------|--------------|
| Blank | 39mm   | SK 615 540-1 |
|       | 44.5mm | SK 615 541-1 |



H = 39 mm



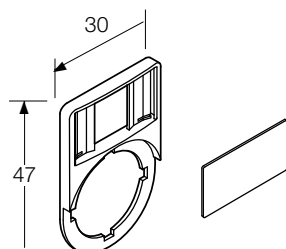
H = 39 mm



H = 44.5 mm

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

## Custom engraved inserts for legend plate holders 22mm



### Nameplate Inserts — Brushed aluminum

| Type                           | Maximum letters per line | Catalog number |
|--------------------------------|--------------------------|----------------|
| <br>1 line                     | 11                       | MP-NP19-01     |
| <br>2 lines                    | 11                       | MP-NP19-02     |
| <br>2 position selector switch | 5                        | MP-NP19-03     |
| <br>3 position selector switch | 5                        | MP-NP19-04     |
| <br>2 position selector switch | 5                        | MP-NP19-05     |

### General specifications

1. All characters are 1/8" high, upper & lower case. Please specify if all capital letters are desired.
2. The legend plate inserts and the fixed legend plates are silver-grey anodized aluminum.
3. All special engravings involve engraving the desired lettering into the metal surface and then treating the engraved surfaces with black ink.

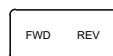
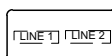
#### EXAMPLE:

MP-NP19-05

1: FWD

2: REV

"MP-NP19" is the blank legend plate catalog number. "-05" refers to the layout of text (see dimension illustrations).



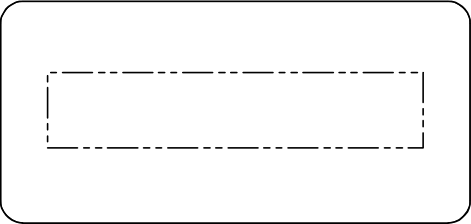
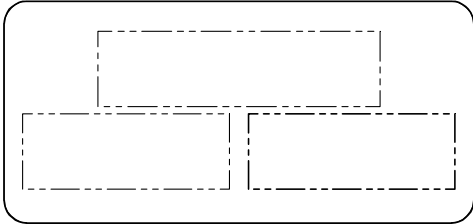
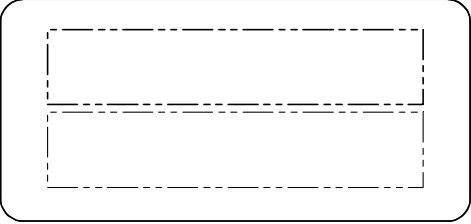
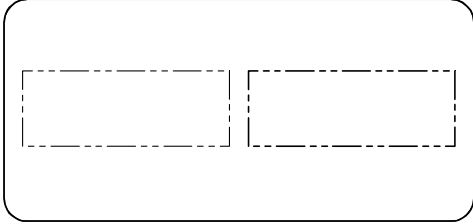
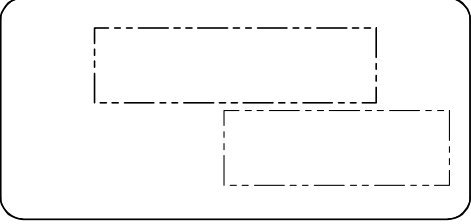
### Legend Plate order form

Use legend plate order form on next page.

## Engraved legend plate form

Custom engraved nameplates  
22mm

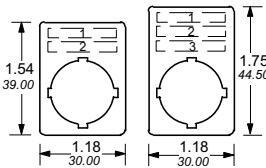
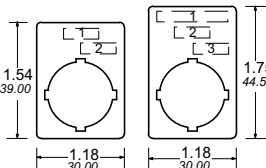
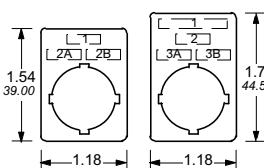
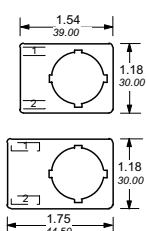
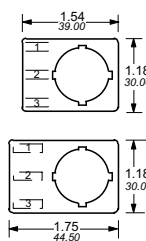
7

| ENGRAVED LEGEND PLATE FORM<br>MP-NP19                                                                                       |                                                                                                                                                 | PAGE: ____ OF: ____ |
|-----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| MP-NP19- ____ ( BRUSHED ALUMINUM )<br>ORIG. DATE: _____<br>ISSUED BY: _____<br>ALL CAPITALS?    YES    NO<br>REMARKS: _____ | ORDER NUMBER: _____<br>ORDER: QTY: _____<br>SHIPPING METHOD: _____<br>DUE DATE: ____ - ____ - ____<br>ENGRAVER: _____<br>Q.C. INSPECTION: _____ |                     |
| <b>PRINT INFORMATION TO BE ENGRAVED</b>                                                                                     |                                                                                                                                                 |                     |
| <br>-01                                   | <br>-04                                                      |                     |
| <br>-02                                  | <br>-05                                                     |                     |
| <br>-03                                  | MP-NP19: REV. A<br>03/04/05                                                                                                                     |                     |

## Custom engraved nameplates 22mm

Pilot Devices  
Legend plates  
22mm

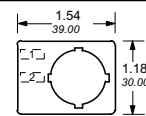
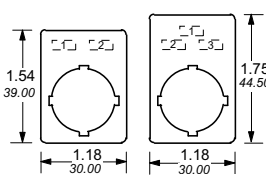
### Fixed nameplates — aluminum ①

| Type                                                                                                               | Maximum letters per line                                          | Catalog number |
|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|----------------|
| <br>Pushbuttons or pilot lights   | 11<br>39mm                                                        | MP-NPE28-01    |
|                                                                                                                    | 11<br>44.5mm                                                      | MP-NPE29-01    |
| <br>2 Position selector switches  | 5<br>39mm                                                         | MP-NPE28-02    |
|                                                                                                                    | 11 (line 1)<br>5 (line 2)<br>5 (line 3)<br>44.5mm                 | MP-NPE29-02    |
| <br>3 Position selector switches | 5<br>39mm                                                         | MP-NPE28-03    |
|                                                                                                                    | 11 (line 1)<br>5 (line 2)<br>5 (line 3A)<br>5 (line 3B)<br>44.5mm | MP-NPE29-03    |
| <br>2 Position toggle switches  | 4<br>39mm                                                         | MP-NPE28-04    |
|                                                                                                                    | 5<br>44.5mm                                                       | MP-NPE29-04    |
| <br>3 Position toggle switches  | 39mm                                                              | MP-NPE28-05    |
|                                                                                                                    | 44.5mm                                                            | MP-NPE29-05    |



CBK-NPE28-02

### Fixed nameplates — aluminum ①

| Type                                                                                                                 | Maximum letters per line                          | Catalog number |
|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|----------------|
| <br>Pushbuttons or pilot lights    | 11<br>39mm                                        | MP-NPE28-06    |
|                                                                                                                      | 11<br>44.5mm                                      | MP-NPE29-06    |
| <br>2 Position selector switches | 5<br>39mm                                         | MP-NPE28-07    |
|                                                                                                                      | 11 (line 1)<br>5 (line 2)<br>5 (line 3)<br>44.5mm | MP-NPE29-07    |

### General specifications

1. All characters are 1/8" high, upper & lower case. Please specify if all capital letters are desired.
2. The legend plate inserts and the fixed legend plates are silver-grey anodized aluminum.
3. All special engravings involve engraving the desired lettering into the metal surface and then treating the engraved surfaces with black ink.

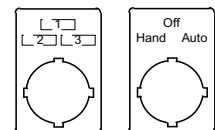
### Ordering custom engraved nameplates — USE ORDER FORM FROM FOLLOWING PAGES

1. Select the desired legend plate.
2. Indicate the catalog number.
3. Write the desired words to be engraved on each line.

#### EXAMPLE:

MP-NPE28P-03

- 1: OFF
- 2: HAND
- 3: AUTO



① For drilling plans, see page 7.74.

## Engraved legend plate form

Custom engraved nameplates  
22mm

7

| ENGRAVED LEGEND PLATE FORM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <div style="text-align: center; margin-bottom: 10px;">MP-NPE28</div> <div>MP-NPE28-____ (BRUSHED ALUMINUM)</div> <div>ORIG. DATE: _____</div> <div>ISSUED BY: _____</div> <div>ALL CAPITALS?   YES   NO</div> <div>REMARKS: _____</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <div>PAGE: ____ OF: ____</div> <div>ORDER NUMBER: _____</div> <div>ORDER: QTY: _____</div> <div>SHIPPING METHOD: _____</div> <div>DUE DATE: ____ - ____ - ____</div> <div>ENGRAVER: _____</div> <div>Q.C. INSPECTION: _____</div> |
| PRINT INFORMATION TO BE ENGRAVED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                   |
| <div style="display: flex; justify-content: space-around; align-items: flex-start;"><div style="border: 1px solid black; border-radius: 10px; padding: 10px; width: 30%; text-align: center;"><div style="border: 1px dashed black; width: 80%; margin: 0 auto; height: 40px;"></div><div style="border: 1px dashed black; width: 80%; margin: 0 auto; height: 40px;"></div><div style="border: 1px solid black; width: 60%; margin: 10px auto; height: 120px; border-radius: 50%; text-align: center; line-height: 120px;">-01</div></div><div style="border: 1px solid black; border-radius: 10px; padding: 10px; width: 30%; text-align: center;"><div style="border: 1px dashed black; width: 40%; margin: 0 auto; height: 20px;"></div><div style="border: 1px dashed black; width: 60%; margin: 0 auto; height: 20px;"></div><div style="border: 1px solid black; width: 60%; margin: 10px auto; height: 120px; border-radius: 50%; text-align: center; line-height: 120px;">-02</div></div><div style="border: 1px solid black; border-radius: 10px; padding: 10px; width: 30%; text-align: center;"><div style="border: 1px dashed black; width: 40%; margin: 0 auto; height: 20px;"></div><div style="display: flex; justify-content: space-between; margin: 0 auto;"><div style="border: 1px dashed black; width: 45%; height: 20px;"></div><div style="border: 1px dashed black; width: 45%; height: 20px;"></div></div><div style="border: 1px solid black; width: 60%; margin: 10px auto; height: 120px; border-radius: 50%; text-align: center; line-height: 120px;">-03</div></div></div> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 20px;"><div style="border: 1px solid black; border-radius: 10px; padding: 10px; width: 45%; text-align: center;"><div style="border: 1px dashed black; width: 60%; margin: 0 auto; height: 20px;"></div><div style="border: 1px dashed black; width: 60%; margin: 0 auto; height: 20px;"></div><div style="border: 1px dashed black; width: 60%; margin: 0 auto; height: 20px;"></div><div style="border: 1px solid black; width: 60%; margin: 10px auto; height: 120px; border-radius: 50%; text-align: center; line-height: 120px;">-04, -05 or -06</div></div><div style="border: 1px solid black; border-radius: 10px; padding: 10px; width: 45%; text-align: center;"><div style="display: flex; justify-content: space-between; margin: 0 auto;"><div style="border: 1px dashed black; width: 45%; height: 20px;"></div><div style="border: 1px dashed black; width: 45%; height: 20px;"></div></div><div style="border: 1px solid black; width: 60%; margin: 10px auto; height: 120px; border-radius: 50%; text-align: center; line-height: 120px;">-07</div></div></div> |                                                                                                                                                                                                                                   |

Engraved legend plate form  
Custom engraved nameplates  
22mm

Pilot Devices  
Legend plates  
22mm

ENGRAVED LEGEND PLATE FORM

MP-NPE29

PAGE: \_\_\_ OF: \_\_\_

MP-NPE29- \_\_\_\_ (BRUSHED ALUMNINUM)

ORDER NUMBER: \_\_\_\_\_

ORIG. DATE: \_\_\_\_\_

ORDER: QTY: \_\_\_\_\_

ISSUED BY: \_\_\_\_\_

SHIPPING METHOD: \_\_\_\_\_

ALL CAPITALS? YES NO

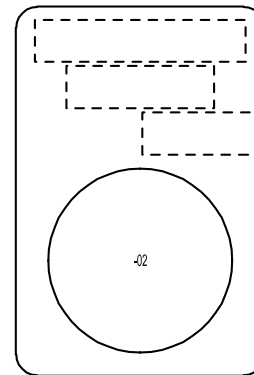
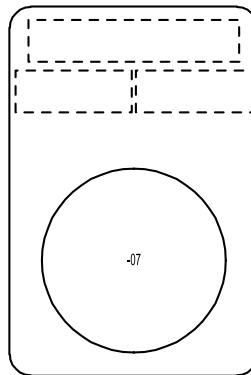
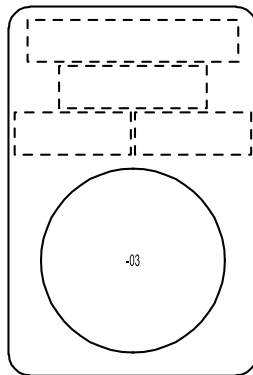
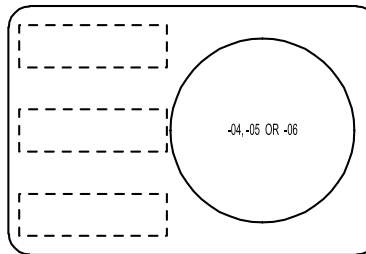
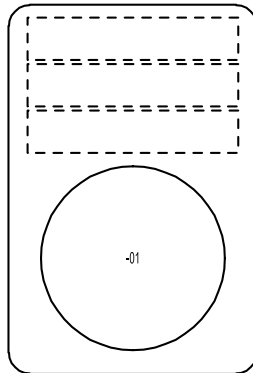
DUE DATE: \_\_\_\_ - \_\_\_\_ - \_\_\_\_

REMARKS: \_\_\_\_\_

ENGRAVER: \_\_\_\_\_

Q.C. INSPECTION: \_\_\_\_\_

PRINT INFORMATION TO BE ENGRAVED



MP-NPE29  
6/10/04

## Special legend plates for plastic enclosures 22mm

Legend plates for plastic enclosures

For 1, 2, 3, 4 or 6-seat

| Description                                        | Catalog number  |
|----------------------------------------------------|-----------------|
| Of silvergrey aluminum on plastic.                 |                 |
| 1-seat                                             | 1SFA611930R1000 |
| 2-seat                                             | 1SFA611930R1002 |
| 3-seat                                             | 1SFA611930R1003 |
| 4-seat                                             | 1SFA611930R1004 |
| 6-seat                                             | 1SFA611930R1005 |
| Of silvergrey aluminum on plastic. (Pos. 1 Yellow) |                 |
| 2-seat                                             | 1SFA611930R1006 |
| 3-seat                                             | 1SFA611930R1007 |
| 4-seat                                             | 1SFA611930R1008 |
| 6-seat                                             | 1SFA611930R1009 |

### Custom engraved legend plates for plastic enclosures For 1, 2, 3, 4 or 6-seat

Fill in appropriate templates on the following pages when ordering

| Description                               | Name Plate         | Catalog number  |
|-------------------------------------------|--------------------|-----------------|
| Custom engraved 1-seat                    | 1SFA 611 930 R1000 | CUSTOM 1 SEAT   |
| Custom engraved 2-seat                    | 1SFA 611 930 R1002 | CUSTOM 2 SEAT   |
| Custom engraved 3-seat                    | 1SFA 611 930 R1003 | CUSTOM 3 SEAT   |
| Custom engraved 4-seat                    | 1SFA 611 930 R1004 | CUSTOM 4 SEAT   |
| Custom engraved 6-seat                    | 1SFA 611 930 R1005 | CUSTOM 6 SEAT   |
| Custom engraved 2-seat, position 1 yellow | 1SFA 611 930 R1006 | CUSTOM 2 SEAT Y |
| Custom engraved 3-seat, position 1 yellow | 1SFA 611 930 R1007 | CUSTOM 3 SEAT Y |
| Custom engraved 4-seat, position 1 yellow | 1SFA 611 930 R1008 | CUSTOM 4 SEAT Y |
| Custom engraved 6-seat, position 1 yellow | 1SFA 611 930 R1009 | CUSTOM 6 SEAT Y |



**Engraved legend plate form**  
Custom engraved nameplates  
1-Seat, vertical, 22mm

**Pilot Devices**  
Legend plates  
22mm

**ENGRAVED LEGEND PLATE FORM**

PAGE \_\_\_\_ of \_\_\_\_

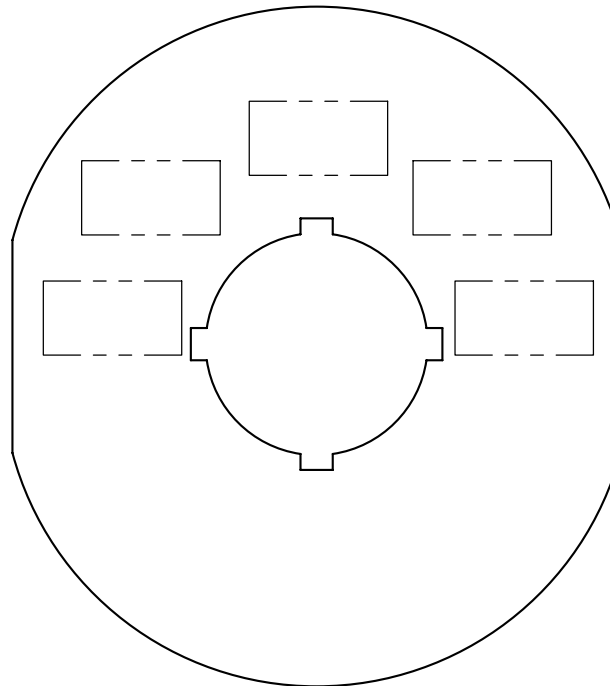
CUSTOM 1 SEAT  
(silver-grey brushed plastic)

ORDER NUMBER : \_\_\_\_\_ ORDER QTY: \_\_\_\_\_  
SHIPPING METHOD \_\_\_\_\_ DUE DATE: \_\_\_\_ / \_\_\_\_ / \_\_\_\_  
ALL CAPITALS? YES NO  
ORDER DATE: \_\_\_\_\_ ISSUED BY \_\_\_\_\_  
REMARKS: \_\_\_\_\_

To be completed by ABB personnel.

ENGRAVER \_\_\_\_\_ Q.C. INSPECTION: \_\_\_\_\_

PRINT INFORMATION TO BE ENGRAVED:



## Engraved legend plate form

Custom engraved nameplates  
1-Seat, horizontal, 22mm

### ENGRAVED LEGEND PLATE FORM

PAGE \_\_\_\_ of \_\_\_\_

CUSTOM 1 SEAT  
(silver-grey brushed plastic)

ORDER NUMBER : \_\_\_\_\_

ORDER QTY: \_\_\_\_\_

SHIPPING METHOD \_\_\_\_\_

DUE DATE: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

ALL CAPITALS? YES NO

ORDER DATE: \_\_\_\_\_

ISSUED BY \_\_\_\_\_

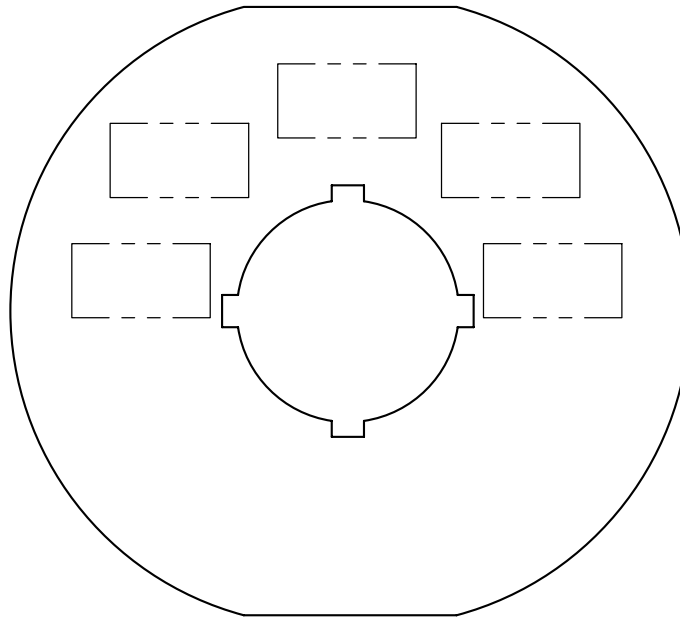
REMARKS: \_\_\_\_\_

To be completed by ABB personnel.

ENGRAVER \_\_\_\_\_

Q.C. INSPECTION: \_\_\_\_\_

PRINT INFORMATION TO BE ENGRAVED:



# Engraved legend plate form

Custom engraved nameplates  
2-Seat, vertical, 22mm

Pilot Devices  
Legend plates  
22mm

## ENGRAVED LEGEND PLATE FORM

PAGE \_\_\_\_ of \_\_\_\_

CIRCLE ONE: CUSTOM 2 SEAT  
(silver-grey aluminum)

CUSTOM 2 SEAT Y  
(position 1 yellow)

ORDER NUMBER : \_\_\_\_\_

ORDER QTY: \_\_\_\_\_

SHIPPING METHOD \_\_\_\_\_

DUE DATE: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

ALL CAPITALS? YES NO

ORDER DATE: \_\_\_\_\_

ISSUED BY \_\_\_\_\_

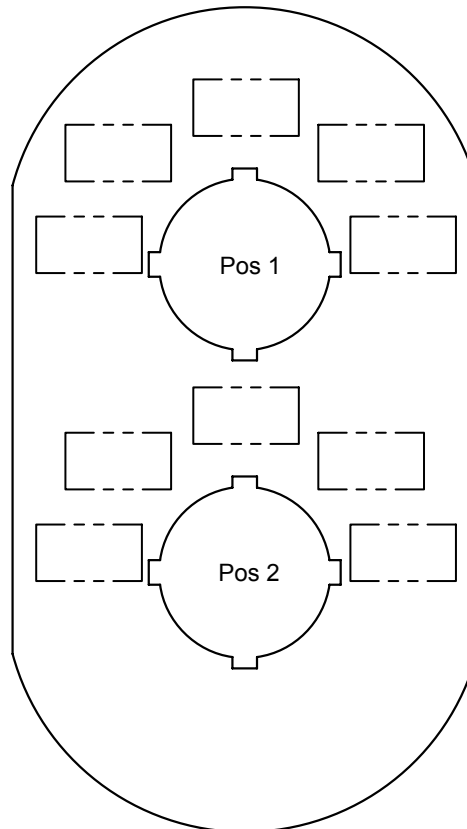
REMARKS: \_\_\_\_\_

To be completed by ABB personnel.

ENGRAVER \_\_\_\_\_

Q.C. INSPECTION: \_\_\_\_\_

PRINT INFORMATION TO BE ENGRAVED:



## Engraved legend plate form

Custom engraved nameplates  
3-Seat, vertical, 22mm

### ENGRAVED LEGEND PLATE FORM

PAGE \_\_\_\_ of \_\_\_\_

CIRCLE ONE: CUSTOM 3 SEAT  
(silver-grey aluminum)

CUSTOM 3 SEAT Y  
(position 1 yellow)

ORDER NUMBER : \_\_\_\_\_

ORDER QTY: \_\_\_\_\_

SHIPPING METHOD \_\_\_\_\_

DUE DATE: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

ALL CAPITALS? YES NO

ORDER DATE: \_\_\_\_\_

ISSUED BY \_\_\_\_\_

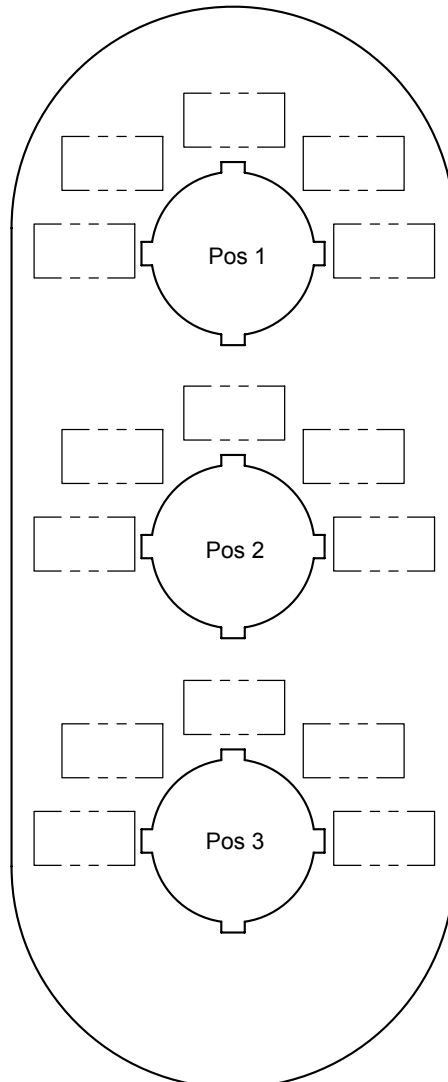
REMARKS : \_\_\_\_\_

To be completed by ABB personnel.

ENGRAVER \_\_\_\_\_

Q.C. INSPECTION: \_\_\_\_\_

PRINT INFORMATION TO BE ENGRAVED:



**Engraved legend plate form**  
Custom engraved nameplates  
4-Seat, vertical, 22mm

**Pilot Devices**  
Legend plates  
22mm

**ENGRAVED LEGEND PLATE FORM**

PAGE \_\_\_\_ of \_\_\_\_

CIRCLE ONE:      CUSTOM 4 SEAT  
                                 (silver-grey aluminum)

CUSTOM 4 SEAT Y  
                                 (position 1 yellow)

ORDER NUMBER : \_\_\_\_\_

ORDER QTY: \_\_\_\_\_

SHIPPING METHOD \_\_\_\_\_

DUE DATE: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

ALL CAPITALS?    YES   NO

ORDER DATE: \_\_\_\_\_

ISSUED BY \_\_\_\_\_

REMARKS : \_\_\_\_\_

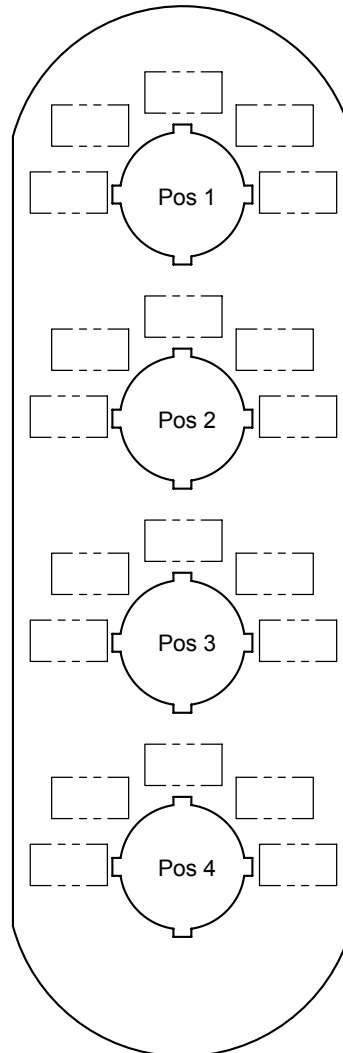
\_\_\_\_\_

To be completed by ABB personnel

ENGRAVER \_\_\_\_\_

Q.C. INSPECTION: \_\_\_\_\_

PRINT INFORMATION TO BE ENGRAVED:



## Engraved legend plate form

Custom engraved nameplates  
6-Seat, vertical, 22mm

### ENGRAVED LEGEND PLATE FORM

PAGE \_\_\_\_ of \_\_\_\_

CIRCLE ONE: CUSTOM 6 SEAT  
(silver-grey aluminum)

CUSTOM 6 SEAT Y  
(position 1 yellow)

ORDER NUMBER : \_\_\_\_\_

ORDER QTY: \_\_\_\_\_

SHIPPING METHOD \_\_\_\_\_

DUE DATE: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

ALL CAPITALS? YES NO

ORDER DATE: \_\_\_\_\_

ISSUED BY \_\_\_\_\_

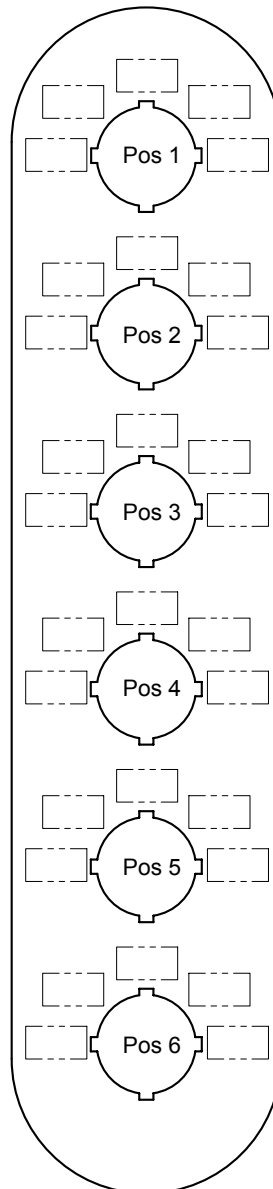
REMARKS: \_\_\_\_\_

To be completed by ABB personnel.

ENGRAVER \_\_\_\_\_

Q.C. INSPECTION: \_\_\_\_\_

PRINT INFORMATION TO  
BE ENGRAVED:



30mm

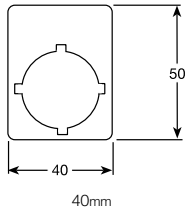
Legend plates



## Custom legend plates

- Legend plate with customer selected text

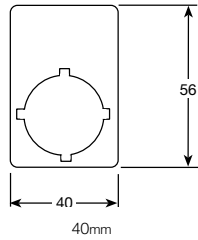
## Legend plates for pushbuttons 30mm



### Blank fixed legend plates

Of silvergrey aluminum

| Size   | Catalog Number |
|--------|----------------|
| 50mm H | SK 615 640-1   |
| 56mm H | SK 615 641-1   |



### Engraved fixed legend plates, with text ①

Of silvergrey aluminum, 50mm H

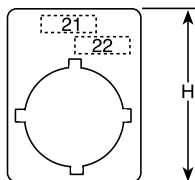
| Text           | Catalog Number |
|----------------|----------------|
| <b>English</b> |                |
| Close          | SK 615 652-13  |
| Down           | SK 615 652-14  |
| Emergency stop | SK 615 652-15  |
| Fast           | SK 615 652-16  |
| Forward        | SK 615 652-17  |
| In             | SK 615 650-29  |
| Inching        | SK 615 652-18  |
| Jog            | SK 615 652-JO  |
| Left           | SK 615 652-39  |
| Lower          | SK 615 652-20  |
| Off            | SK 615 652-21  |
| On             | SK 615 652-22  |
| Open           | SK 615 652-23  |
| Out            | SK 615 652-24  |
| Raise          | SK 615 652-25  |
| Reset          | SK 615 652-27  |
| Reverse        | SK 615 652-28  |
| Right          | SK 615 652-40  |
| Run            | SK 615 652-29  |
| Slow           | SK 615 652-30  |
| Start          | SK 615 652-44  |
| Stop           | SK 615 652-31  |
| Up             | SK 615 652-32  |

① Text height 3 mm.



## Legend plates for selector switches

30mm



### Two positions

Engraved fixed legend plates, with text ①

Of silvergrey aluminum, 50mm H

**Symbol/Text**

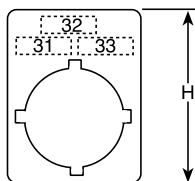
**Pos 21 Pos. 22**

Catalog Number

#### English

Fwd Rev  
Hand Auto  
Jog Run  
Off On  
Stop Start

SK 615 652-FR  
SK 615 652-71  
SK 615 652-52  
SK 615 652-53  
SK 615 652-55



### Three positions

Engraved fixed legend plates, with text ①

Of silvergrey aluminum, 50mm H

**Symbol/Text**

**Pos 31 Pos. 32 Pos. 33**

Catalog Number

#### English

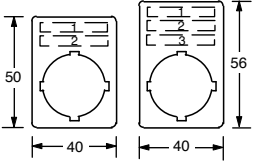
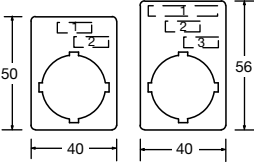
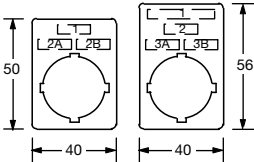
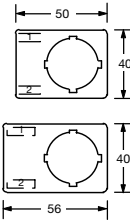
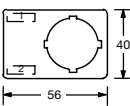
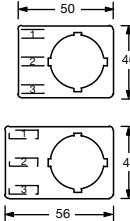
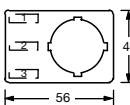
Hand O Auto  
Slow Off Fast

SK 615 652-80  
SK 615 652-60

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

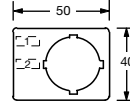
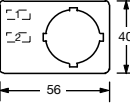
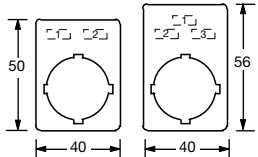
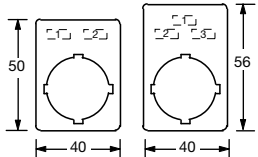
## Custom engraved legend plates 30mm

### Fixed nameplates — aluminum

| Type                                                                                                              | Maximum letters per line                                | Catalog number |
|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|----------------|
| <br>Pushbuttons or pilot lights   | 11                                                      | G1MP-NPE28-01  |
|                                                                                                                   | 50mm                                                    |                |
|                                                                                                                   | 11                                                      | G1MP-NPE29-01  |
| <br>2 Position selector switches  | 5                                                       | G1MP-NPE28-02  |
|                                                                                                                   | 50mm                                                    |                |
|                                                                                                                   | 11 (line 1)<br>5 (line 2)<br>5 (line 3)                 | G1MP-NPE29-02  |
| <br>3 Position selector switches | 5                                                       | G1MP-NPE28-03  |
|                                                                                                                   | 50mm                                                    |                |
|                                                                                                                   | 11 (line 1)<br>5 (line 2)<br>5 (line 3A)<br>5 (line 3B) | G1MP-NPE29-03  |
| <br>2 Position toggle switches | 4                                                       | G1MP-NPE28-04  |
|                                                                                                                   | 50mm                                                    |                |
| <br>2 Position toggle switches | 5                                                       | G1MP-NPE29-04  |
|                                                                                                                   | 56mm                                                    |                |
| <br>3 Position toggle switches |                                                         | G1MP-NPE28-05  |
|                                                                                                                   | 50mm                                                    |                |
| <br>3 Position toggle switches |                                                         | G1MP-NPE29-05  |
|                                                                                                                   | 56mm                                                    |                |



### Fixed nameplates — aluminum

| Type                                                                                                                 | Maximum letters per line                | Catalog number |
|----------------------------------------------------------------------------------------------------------------------|-----------------------------------------|----------------|
| <br>Pushbuttons or pilot lights     | 11                                      | G1MP-NPE28-06  |
|                                                                                                                      | 50mm                                    |                |
| <br>Pushbuttons or pilot lights     | 11                                      | G1MP-NPE29-06  |
|                                                                                                                      | 56mm                                    |                |
| <br>2 Position selector switches | 5                                       | G1MP-NPE28-07  |
|                                                                                                                      | 50mm                                    |                |
| <br>2 Position selector switches | 11 (line 1)<br>5 (line 2)<br>5 (line 3) | G1MP-NPE29-07  |
|                                                                                                                      | 56mm                                    |                |

### General specifications

- All characters are 1/8" high, upper & lower case. Please specify if all capital letters are desired.
- The legend plate inserts and the fixed legend plates are silver-grey anodized aluminum.
- All special engravings involve engraving the desired lettering into the metal surface and then treating the engraved surfaces with black ink.

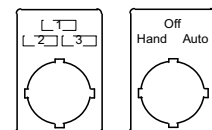
### Ordering custom engraved nameplates

- Select the desired legend plate.
- Use following pages to order.
- Indicate the catalog number.
- Write the desired words to be engraved on each line.

#### EXAMPLE:

G1MP-NPE28P-03

- 1: OFF  
2: HAND  
3: AUTO





# Engraved legend plate form

Custom engraved legend plates  
30mm

7

| ENGRAVED LEGEND PLATE FORM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                            |                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| G1 MP-NPE29                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                            | PAGE: ____ OF: ____ |
| <p>G1 MP-NPE29-____ (BRUSHED ALUMINUM)</p> <p>ORIG. DATE: _____</p> <p>ISSUED BY: _____</p> <p>ALL CAPITALS?    YES    NO</p> <p>REMARKS: _____</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>ORDER NUMBER: _____</p> <p>ORDER: QTY: _____</p> <p>SHIPPING METHOD: _____</p> <p>DUE DATE: ____ - ____ - ____</p> <p>ENGRAVER: _____</p> <p>Q.C. INSPECTION: _____</p> |                     |
| PRINT INFORMATION TO BE ENGRAVED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                            |                     |
| <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="border: 1px solid black; border-radius: 10px; padding: 10px; width: 30%;"> <div style="border: 1px dashed black; height: 80px; margin-bottom: 10px;"></div> <div style="border: 1px solid black; border-radius: 50%; width: 80%; height: 80%; margin: 0 auto; text-align: center; line-height: 80px;">-01</div> </div> <div style="border: 1px solid black; border-radius: 10px; padding: 10px; width: 30%;"> <div style="border: 1px dashed black; height: 80px; margin-bottom: 10px;"></div> <div style="border: 1px solid black; border-radius: 50%; width: 80%; height: 80%; margin: 0 auto; text-align: center; line-height: 80px;">-02</div> </div> <div style="border: 1px solid black; border-radius: 10px; padding: 10px; width: 30%;"> <div style="border: 1px dashed black; height: 80px; margin-bottom: 10px;"></div> <div style="border: 1px solid black; border-radius: 50%; width: 80%; height: 80%; margin: 0 auto; text-align: center; line-height: 80px;">-03</div> </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 20px;"> <div style="border: 1px solid black; border-radius: 10px; padding: 10px; width: 40%;"> <div style="border: 1px dashed black; height: 100px; margin-bottom: 10px;"></div> <div style="border: 1px solid black; border-radius: 50%; width: 80%; height: 80%; margin: 0 auto; text-align: center; line-height: 80px;">-04, -05 or -06</div> </div> <div style="border: 1px solid black; border-radius: 10px; padding: 10px; width: 30%;"> <div style="border: 1px dashed black; height: 80px; margin-bottom: 10px;"></div> <div style="border: 1px solid black; border-radius: 50%; width: 80%; height: 80%; margin: 0 auto; text-align: center; line-height: 80px;">-07</div> </div> </div> |                                                                                                                                                                            |                     |
| <small>G1 MP-NPE29<br/>6/10/04</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                            |                     |



Signal Towers K70 and Signal Beacons KSB offers the customer a wide range of signal elements in all voltages and a solution for every signalling field.

#### Signal towers K70

- Fast mounting of signal elements using bayonet fixing
- Easy changing of bulbs for each module without tools
- Flexibility of signal element combination
- Up to 5 elements possible/up to 10 elements with bracket for 2-sided mounting
- High protection rating optical and audible signal elements with IP 54
- LED elements for long life

#### Signal towers and beacons

- Permanent Light
- Blinking Light
- Flashing Light
- Audible
- LED Permanent Light
- LED Blinking Light
- LED Rotating Light

#### Signal beacons KSB

- Vandal-proof design withstands every mechanical and natural challenge both indoors and outdoors.
- High protection rating IP 65
- Cap consists of high impact polycarbonate (up to 20 J)
- Bulb change via inside of control box

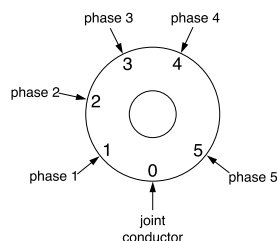
## Signal towers K70 Signal beacons KSB

### Simple fitting with quick fix system

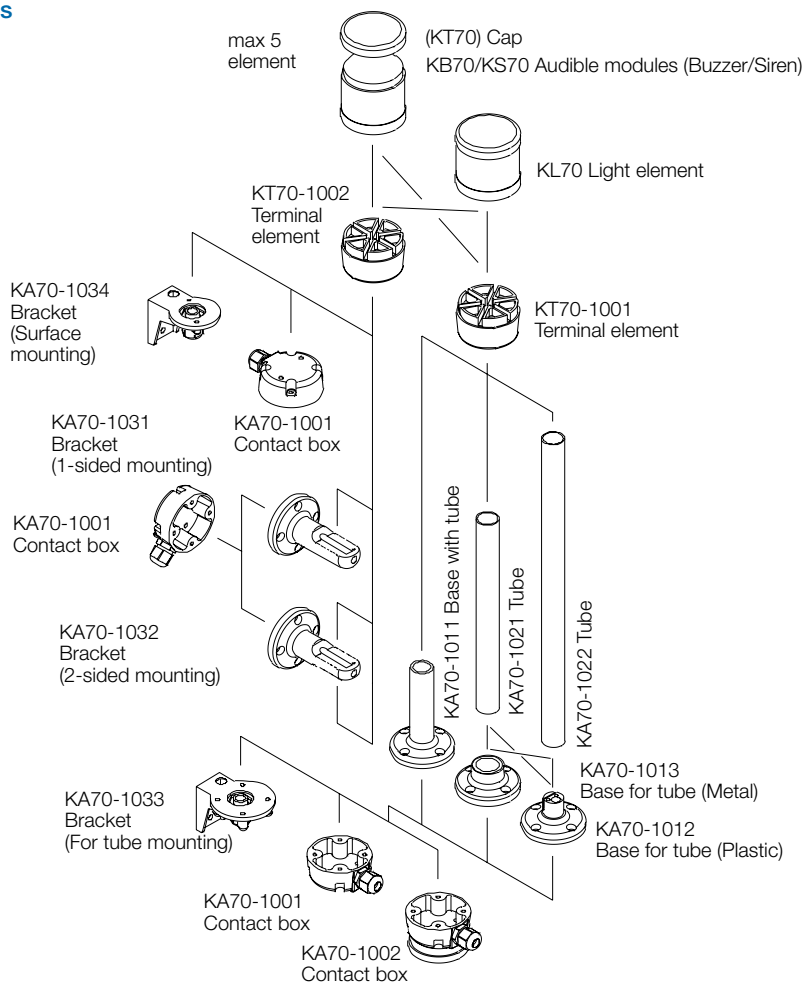
Each K 70 module is equipped with a bayonet fixing with integral contact system. The modules are fastened together by aligning the corresponding white marks then with a gentle twist they are locked into place (see the figures).



### Connection plans



### Combination possibilities



## Optical modules for signal towers K70



Light Elements



| Description                                                         | Catalog number | Weight oz. |
|---------------------------------------------------------------------|----------------|------------|
| <b>Light element</b>                                                |                |            |
| Permanent light, 12-240 V AC/DC. For bulb BA 15d. Bulb not included |                |            |
| Red                                                                 | KL70-401R      | 3.2        |
| Green                                                               | KL70-401G      | 3.2        |
| Yellow                                                              | KL70-401Y      | 3.2        |
| Blue                                                                | KL70-401L      | 3.2        |
| Clear                                                               | KL70-401C      | 3.2        |
| <b>Blinking light, 24 V AC/DC. With integrated LED</b>              |                |            |
| Red                                                                 | KL70-306R      | 3.5        |
| Green                                                               | KL70-306G      | 3.5        |
| Yellow                                                              | KL70-306Y      | 3.5        |
| Blue                                                                | KL70-306L      | 3.5        |
| Clear                                                               | KL70-306C      | 3.5        |
| <b>Flashing light, 24 V AC/DC. With integrated Xenon Tube</b>       |                |            |
| Red                                                                 | KL70-203R      | 4.2        |
| Green                                                               | KL70-203G      | 4.2        |
| Yellow                                                              | KL70-203Y      | 4.2        |
| Blue                                                                | KL70-203L      | 4.2        |
| Clear                                                               | KL70-203C      | 4.2        |
| <b>Blinking light, 115 V AC. With integrated LED</b>                |                |            |
| Red                                                                 | KL70-342R      | 0.10       |
| Green                                                               | KL70-342G      | 3.5        |
| Yellow                                                              | KL70-342Y      | 3.5        |
| Blue                                                                | KL70-342L      | 3.5        |
| Clear                                                               | KL70-342C      | 3.5        |
| <b>Flashing light, 115 V AC. With integrated Xenon Tube</b>         |                |            |
| Red                                                                 | KL70-113R      | 3.9        |
| Green                                                               | KL70-113G      | 3.9        |
| Yellow                                                              | KL70-113Y      | 3.9        |
| Blue                                                                | KL70-113L      | 3.9        |
| Clear                                                               | KL70-113C      | 3.9        |
| <b>Blinking light, 230 V AC. With integrated LED</b>                |                |            |
| Red                                                                 | KL70-352R      | 3.5        |
| Green                                                               | KL70-352G      | 3.5        |
| Yellow                                                              | KL70-352Y      | 3.5        |
| Blue                                                                | KL70-352L      | 3.5        |
| Clear                                                               | KL70-352C      | 3.5        |
| <b>Flashing light, 230 V AC. With integrated Xenon Tube</b>         |                |            |
| Red                                                                 | KL70-123R      | 3.9        |
| Green                                                               | KL70-123G      | 3.9        |
| Yellow                                                              | KL70-123Y      | 3.9        |
| Blue                                                                | KL70-123L      | 3.9        |
| Clear                                                               | KL70-123C      | 3.9        |
| <b>LED Permanent light, 24 V AC/DC. With integrated LED</b>         |                |            |
| Red                                                                 | KL70-305R      | 3.5        |
| Green                                                               | KL70-305G      | 3.5        |
| Yellow                                                              | KL70-305Y      | 3.5        |
| Blue                                                                | KL70-305L      | 3.5        |
| Clear                                                               | KL70-305C      | 3.5        |
| <b>LED Rotating light, 24 V AC/DC. With integrated LED</b>          |                |            |
| Red                                                                 | KL70-307R      | 3.5        |
| Green                                                               | KL70-307G      | 3.5        |
| Yellow                                                              | KL70-307Y      | 3.5        |
| Blue                                                                | KL70-307L      | 3.5        |
| Clear                                                               | KL70-307C      | 3.5        |

## Signal towers K70



LED bulb

| Description                                                                                    | Catalog number | Weight oz. |
|------------------------------------------------------------------------------------------------|----------------|------------|
| <b>Bulbs for signal tower K70 bulb Ba 15d, 42mm, Max 7 W. For permanent or blinking light.</b> |                |            |
| 24 V, 5 W, AC/DC                                                                               | KA4-1021       | 0.32       |
| 115 V, 5 W, AC/DC                                                                              | KA4-1118       | 0.32       |
| 230 V, 5 W, AC/DC                                                                              | KA4-1148       | 0.32       |

### LED bulbs for signal tower K70 Ba 15d. For 24 V AC/DC, 40mA.

|        |          |      |
|--------|----------|------|
| Red    | KA4-1021 | 0.32 |
| Green  | KA4-1022 | 0.32 |
| Yellow | KA4-1023 | 0.32 |
| Blue   | KA4-1024 | 0.32 |
| White  | KA4-1025 | 0.32 |

### Audible modules. Buzzer element. 85 dB, continuous or pulsating tone, adjustable.

|            |           |      |
|------------|-----------|------|
| 24 V AC/DC | KB70-3001 | 0.39 |
| 115 V AC   | KB70-3101 | 0.39 |
| 230 V AC   | KB70-1201 | 0.42 |

### Siren element

|                                                                                              |           |      |
|----------------------------------------------------------------------------------------------|-----------|------|
| Multi function, 8 diff. Tones adjustable, volume adjustable 100 dB, 115 V AC                 | KS70-1104 | 0.46 |
| Multi function, 8 diff. Tones adjustable, volume adjustable 100 dB, 230 V AC                 | KS70-1204 | 0.42 |
| Multi function, 7 diff. Tones adjustable, volume adjustable, remote control, 100 dB, 24 V DC | KS70-2004 | 0.42 |
| Multi function, 8 diff. Tones adjustable, volume adjustable 100 dB, 24 V AC/DC               | KS70-3004 | 0.42 |
| Continuous tone alternating 108 dB, 24 V DC                                                  | KS70-2002 | 0.53 |

### Terminal elements

|                                    |           |      |
|------------------------------------|-----------|------|
| For tube mounting, including cap   | KT70-1001 | 0.53 |
| For bracket or base, including cap | KT70-1002 | 0.53 |

### Special parts

#### Contact box

|                    |           |      |
|--------------------|-----------|------|
| Cable exit at side | KA70-1001 | 0.25 |
| Magnetic base      | KA70-1002 | 0.25 |

#### Base with tube

|                  |           |      |
|------------------|-----------|------|
| D=25 mm L=110 mm | KA70-1011 | 0.21 |
|------------------|-----------|------|

#### Base for tube

|                  |           |      |
|------------------|-----------|------|
| D=25 mm, Plastic | KA70-1012 | 0.11 |
| D=25 mm, Metal   | KA70-1013 | 1.1  |

#### Tube, anodized aluminum

|                  |           |      |
|------------------|-----------|------|
| D=25 mm L=250 mm | KA70-1021 | 0.28 |
| D=25 mm L=400 mm | KA70-1022 | 0.42 |
| D=25 mm L=800 mm | KA70-1023 | 0.42 |

#### Bracket

|                      |           |      |
|----------------------|-----------|------|
| 1-sided mounting     | KA70-1031 | 0.25 |
| 2-sided mounting     | KA70-1032 | 0.25 |
| For tube mounting    | KA70-1033 | 0.25 |
| For surface mounting | KA70-1034 | 0.25 |



Terminal element



Contact box



Bracket



## Signal beacons KSB



Light element



Anti-twist device

| Description                                                                       | Catalog number | Weight<br>oz. |
|-----------------------------------------------------------------------------------|----------------|---------------|
| <b>Light element</b>                                                              |                |               |
| Permanent light, 12-240 V AC/DC. For bulb BA 15d. Bulb not included.              |                |               |
| Red                                                                               | KSB-401R       | 0.46          |
| Green                                                                             | KSB-401G       | 0.46          |
| Yellow                                                                            | KSB-401Y       | 0.46          |
| Blue                                                                              | KSB-401L       | 0.46          |
| Clear                                                                             | KSB-401C       | 0.46          |
| <b>Flashing light, 24 V DC. With integrated Xenon Tube</b>                        |                |               |
| Red                                                                               | KSB-203R       | 0.49          |
| Green                                                                             | KSB-203G       | 0.49          |
| Yellow                                                                            | KSB-203Y       | 0.49          |
| Blue                                                                              | KSB-203L       | 0.49          |
| Clear                                                                             | KSB-203C       | 0.49          |
| <b>Flashing light, 115 V AC. With integrated Xenon Tube</b>                       |                |               |
| Red                                                                               | KSB-113R       | 0.49          |
| Green                                                                             | KSB-113G       | 0.49          |
| Yellow                                                                            | KSB-113Y       | 0.49          |
| Blue                                                                              | KSB-113L       | 0.49          |
| Clear                                                                             | KSB-113C       | 0.49          |
| <b>Flashing light, 230 V AC. With integrated Xenon Tube</b>                       |                |               |
| Red                                                                               | KSB-123R       | 0.49          |
| Green                                                                             | KSB-123G       | 0.49          |
| Yellow                                                                            | KSB-123Y       | 0.49          |
| Blue                                                                              | KSB-123L       | 0.49          |
| Clear                                                                             | KSB-123C       | 0.49          |
| <b>LED permanent light, 24 V AC/DC. With integrated LED</b>                       |                |               |
| Red                                                                               | KSB-305R       | 0.49          |
| Green                                                                             | KSB-305G       | 0.49          |
| Yellow                                                                            | KSB-305Y       | 0.49          |
| <b>LED blinking light, 24 V AC/DC. With integrated LED</b>                        |                |               |
| Red                                                                               | KSB-306R       | 0.49          |
| Green                                                                             | KSB-306G       | 0.49          |
| Yellow                                                                            | KSB-306Y       | 0.49          |
| <b>LED rotation light, 24 V AC/DC. With integrated LED</b>                        |                |               |
| Red                                                                               | KSB-307R       | 0.49          |
| Green                                                                             | KSB-307G       | 0.49          |
| Yellow                                                                            | KSB-307Y       | 0.49          |
| <b>Special parts</b>                                                              |                |               |
| Anti-twist device                                                                 | KASB-100       | 0.18          |
| <b>Bulbs for signal beacons max 10 W. For permanent light. Bulb Ba 15d, 52mm.</b> |                |               |
| 12 V, 7 W, AC/DC                                                                  | KA3-1018       | 0.39          |
| 24 V, 7 W, AC/DC                                                                  | KA3-1028       | 0.39          |
| 115 V, 7 W, AC/DC                                                                 | KA3-1118       | 0.39          |
| 220-260 V, 7-10 W, AC/DC                                                          | KA3-1148       | 0.39          |

## Technical data

### Signal towers K70 and signal beacons KSB

#### Signal towers K70

##### Approvals



E 175 441



##### Technical specifications

|                                             |                                              |
|---------------------------------------------|----------------------------------------------|
| Housing and Accessories                     | Polyamide, high impact, black                |
| Dome                                        | Polycarbonate, transparent                   |
| Fixing                                      | Base mounting, tube Ø 25mm, bracket mounting |
| Socket                                      | B 15 d, for bulb max. 7W                     |
| Connection                                  | Screw connection up to 2.5 mm <sup>2</sup>   |
| Number of modules possible -2-sided bracket | max. 5<br>max. 10 elements                   |

##### Degrees of protection

|                  |       |                     |
|------------------|-------|---------------------|
| Light Elements   | IP 54 | UL Catalog number 5 |
| Audible Elements | IP 54 | UL Catalog number 5 |

##### Electrical data

|                             |                   |
|-----------------------------|-------------------|
| Permanent Light Element     | 12-240 V AC/DC    |
| Bulb Socket B 15 d, max 7 W | Bulb not included |

|                                              |                             |          |          |
|----------------------------------------------|-----------------------------|----------|----------|
| <b>Flashing light element</b>                | 24 V DC                     | 115 V AC | 230 V AC |
| Flash Frequency                              | 1 Hz                        | 1 Hz     | 1 Hz     |
| Flash Energy                                 | 2 Ws                        | 2 Ws     | 2 Ws     |
| Life Duration                                | 4 x 10 <sup>6</sup> flashes |          |          |
| Current Consumption reduced for AS-Interface | 125 mA<br>80 mA             | 20mA     | 35 mA    |
| Starting Current                             | < 0.5 A at 24 V             |          |          |

|                                    |                 |          |          |
|------------------------------------|-----------------|----------|----------|
| <b>LED permanent light element</b> | 24 V AC/DC      | 115 V AC | 230 V AC |
| Life Duration                      | 100 000 hours   |          |          |
| Current Consumption                | 45 mA           | 25mA     | 25mA     |
| Starting Current                   | < 0.5 A at 24 V |          |          |

|                                   |                 |          |          |
|-----------------------------------|-----------------|----------|----------|
| <b>LED blinking light element</b> | 24 V AC/DC      | 115 V AC | 230 V AC |
| Life Duration                     | 100 000 hours   |          |          |
| Current Consumption               | 25 mA           | 25mA     | 25mA     |
| Starting Current                  | < 0.5 A at 24 V |          |          |
| Blink Frequency                   | c. 1 Hz         | c. 1 Hz  | c. 1 Hz  |

|                                   |                 |  |  |
|-----------------------------------|-----------------|--|--|
| <b>LED rotation light element</b> | 24 V, AC/DC     |  |  |
| Life Duration                     | 100 000 hours   |  |  |
| Current Consumption               | 70 mA           |  |  |
| Starting Current                  | < 0.5 A at 24 V |  |  |
| Rotation Frequency                | c. 120 r.p.m.   |  |  |

##### Temperature

|                                       |               |
|---------------------------------------|---------------|
| Ambient Temperature during operations | -20 to +50 °C |
|---------------------------------------|---------------|

#### Signal beacons KSB

##### Approvals



E 175 441



##### Technical specifications

|                         |                                                            |
|-------------------------|------------------------------------------------------------|
| Housing and Accessories | PC/ABS-Blend, high impact, black                           |
| Dome                    | Polycarbonate, transparent                                 |
| Fixing                  | Installation mounting for Ø 37mm, (PG 29)                  |
| Bulb Socket             | B 15 d, for bulb max. 10W                                  |
| Bulb Change             | Via rear access with bayonet mechanism (Bulb not included) |
| Connection              | Screw connection max 2.5 mm <sup>2</sup>                   |

##### Degrees of protection

|                            |
|----------------------------|
| IP 65, UL Catalog number 5 |
|----------------------------|

##### Electrical data

|                                           |                   |
|-------------------------------------------|-------------------|
| Permanent Light Element Operating Voltage | max. 250 V        |
| Life Duration                             | 100 000 hours     |
| Bulb socket B 15 d, max 10 W              | Bulb not included |

|                                     |               |
|-------------------------------------|---------------|
| <b>LED version: permanent light</b> | 24 V, AC/DC   |
| Life Duration                       | 100 000 hours |
| Current Consumption                 | 45 mA         |

|                               |               |
|-------------------------------|---------------|
| <b>Blinking light element</b> | 24 V, AC/DC   |
| Life Duration                 | 100 000 hours |
| Current Consumption           | 25 mA         |

|                               |               |
|-------------------------------|---------------|
| <b>Rotation light element</b> | 24 V, AC/DC   |
| Life Duration                 | 100 000 hours |
| Current Consumption           | 70 mA         |
| Starting Current              | < 0.5 A       |

|                               |                     |                             |          |          |
|-------------------------------|---------------------|-----------------------------|----------|----------|
| <b>Flashing light element</b> | Operating Voltage   | 24 V AC/DC                  | 115 V AC | 230 V AC |
|                               | Flash Frequency     | 1 Hz                        | 1 Hz     | 1 Hz     |
|                               | Flash Energy        | 2 Ws                        | 2 Ws     | 2 Ws     |
|                               | Life Duration       | 4 x 10 <sup>6</sup> flashes |          |          |
|                               | Current Consumption | 125 mA                      | 20mA     | 35 mA    |
|                               | Starting Current    | < 0.5 A                     | < 0.5 A  | < 0.5 A  |

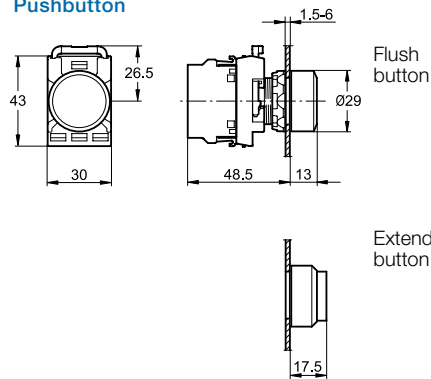
|                    |                                       |               |
|--------------------|---------------------------------------|---------------|
| <b>Temperature</b> | Ambient Temperature during operations | -20 to +50 °C |
|--------------------|---------------------------------------|---------------|

# Approximate dimensions Modular Range

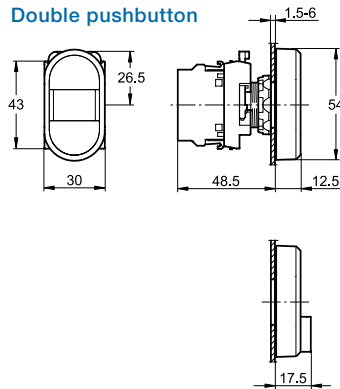
Pilot Devices  
Dimensions

3D drawings can be found in ABB Library.

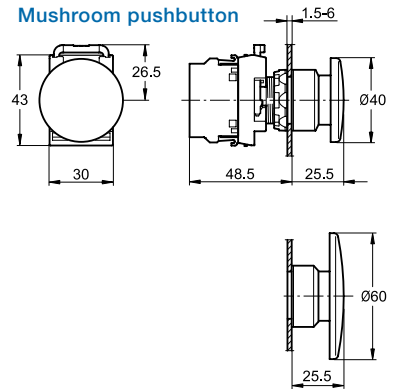
## Pushbutton



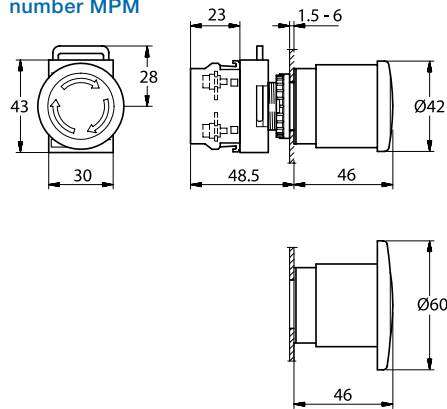
## Double pushbutton



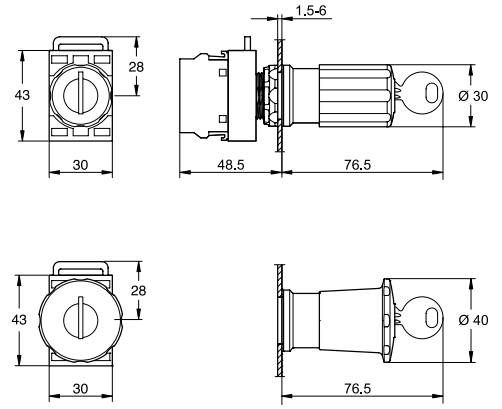
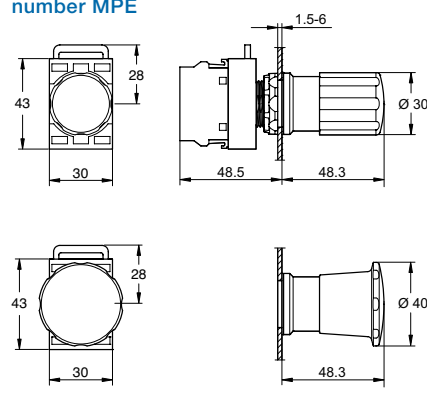
## Mushroom pushbutton



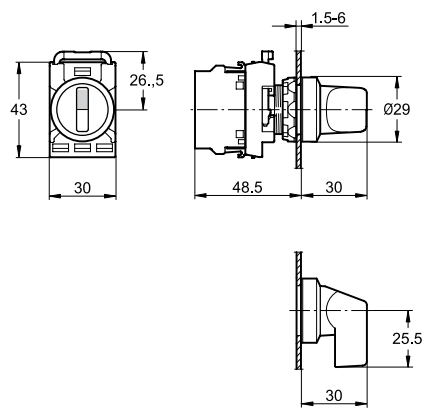
## Emergency stop pushbutton Catalog number MPM



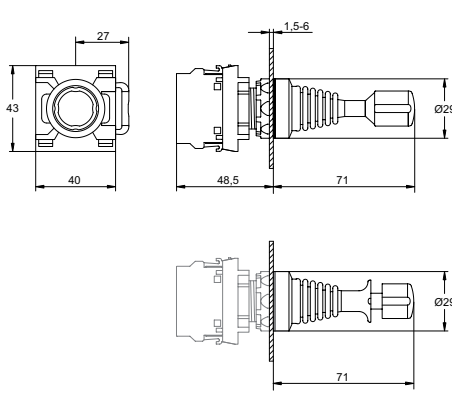
## Emergency stop pushbutton Catalog number MPE



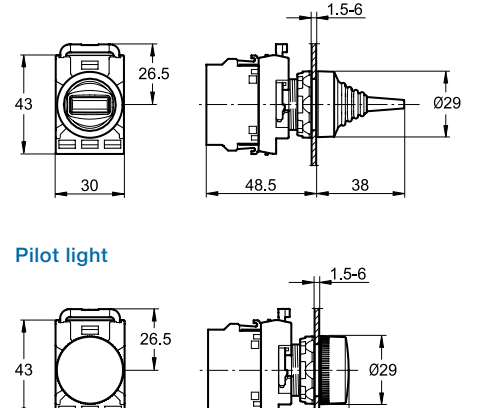
## Selector switch



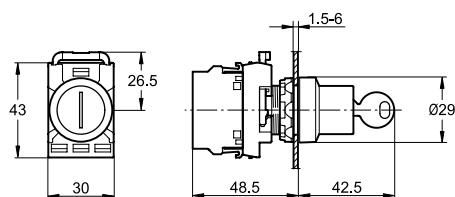
## Joystick



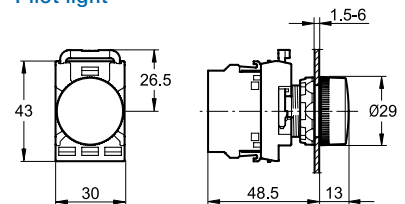
## Toggle switch



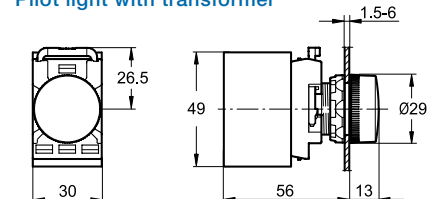
## Key-operated selector switch



## Pilot light

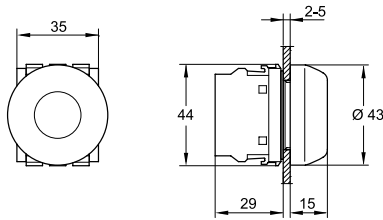


## Pilot light with transformer

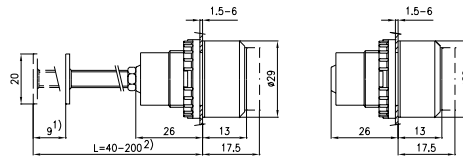


## Approximate dimensions Drilling plans

### Heavy duty pushbutton

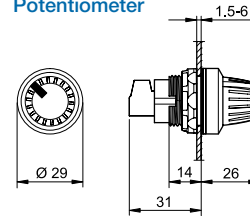


### Reset pushbutton

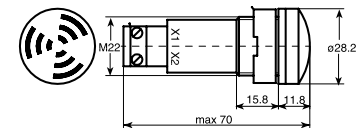


- 1) Length of stroke.
- 2) Can be cut to desired length.

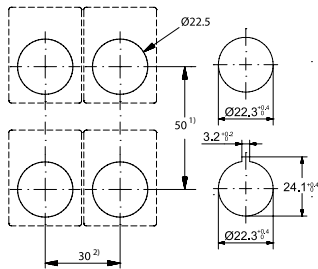
### Potentiometer



### Buzzer

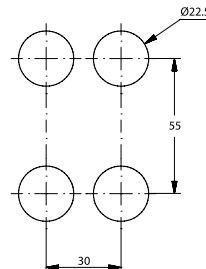


### Drilling plans for pushbuttons, switches and pilot lights

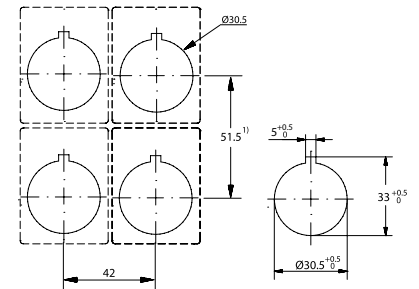


- 1) 55 mm when Legend Plate H= 44.5 mm is used.  
61 mm for mushroom Pushbutton with D=60 mm
- 2) 37 mm when Legend Plate with insert is used,

### Drilling plan for double pushbutton

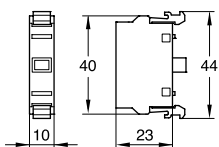


### Drilling plan for 30 mm adaptor



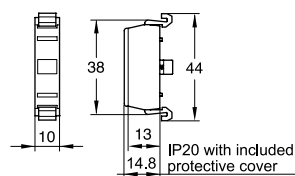
### Contact block

(for front mounting)



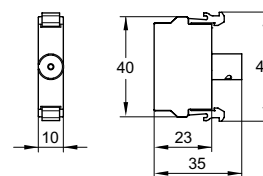
### Micro contact block

(for front mounting)

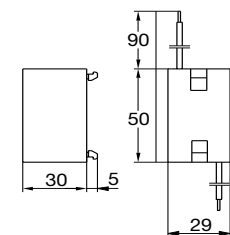


### Lamp block

(for front mounting)

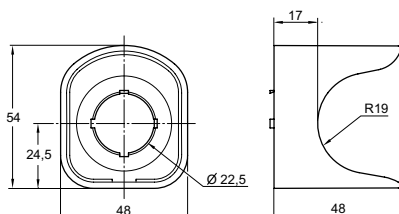


### Transformer block



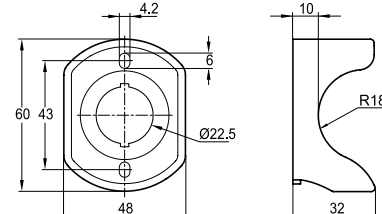
### Emergency stop shroud

Modular Range



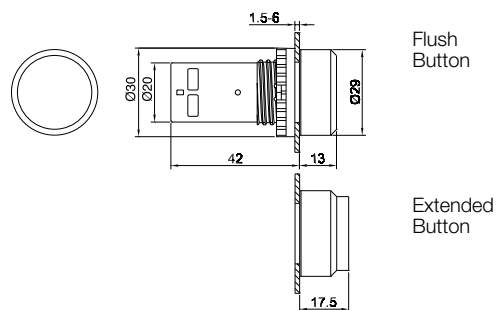
### Emergency stop shroud

Compact Range

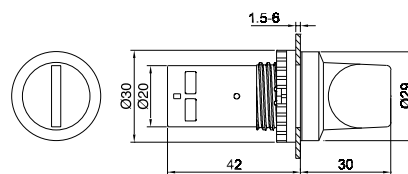


## Approximate dimensions Compact Range

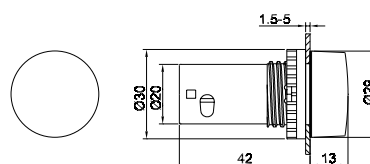
### Pushbutton



### Selector switch

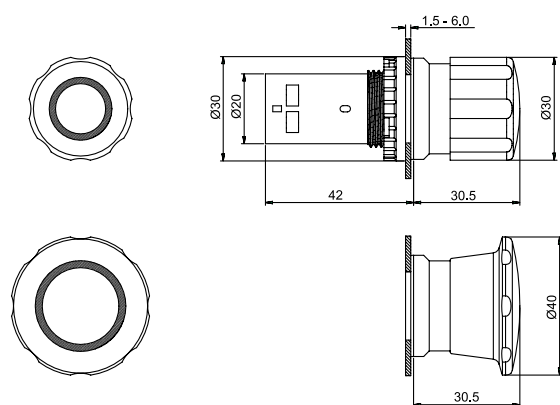


### Pilot light

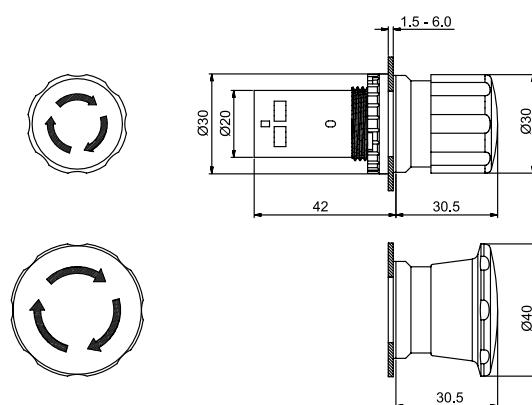


### Emergency stop pushbuttons

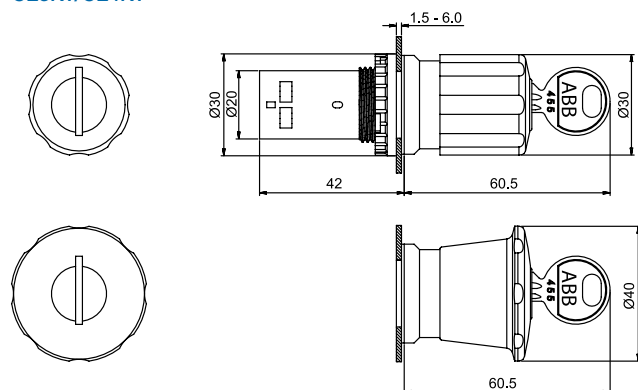
CE3P/CE4P (Pull release)



### CE3T/CE4T (Twist release)

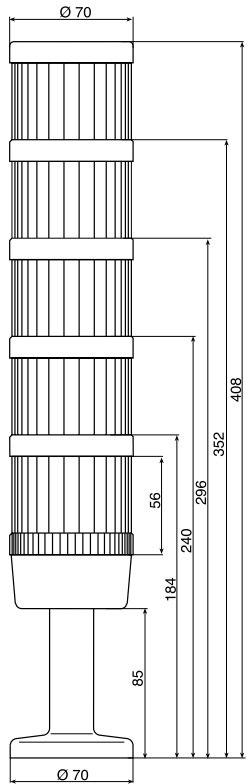


### CE3K1/CE4K1

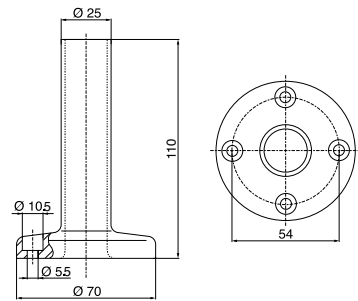


## Dimensions and drilling plans Signal towers

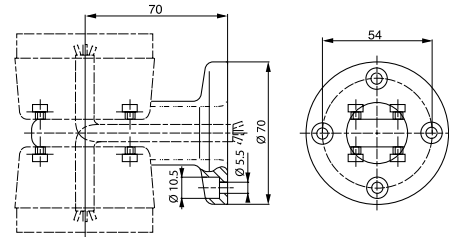
Signal towers K 70



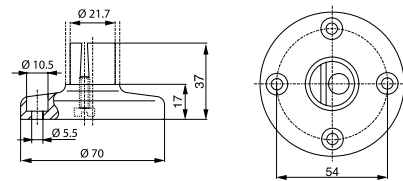
Base with integrated tube



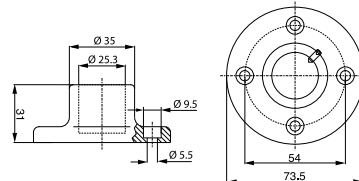
Bracket 2-sided mounting



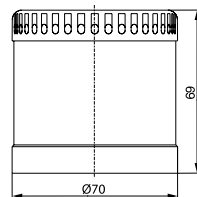
Base for tube, plastic



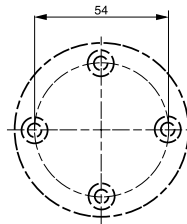
Base for tube, metal



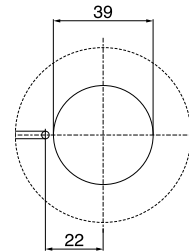
Audible module



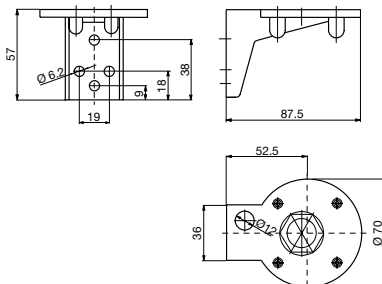
Drilling plan for signal towers K 70



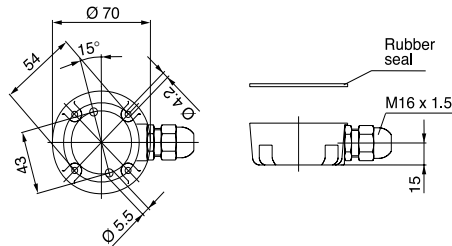
Drilling plan for signal beacons KSB



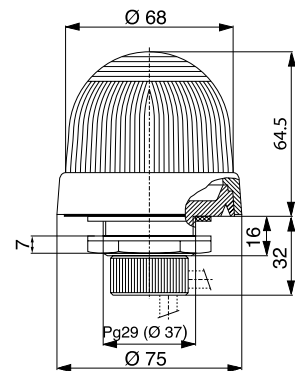
Bracket for tube mounting



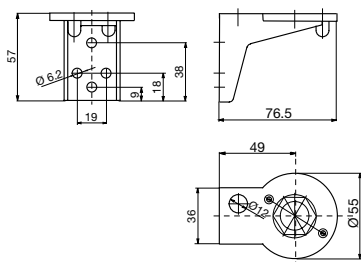
Contact box for cable exit at side



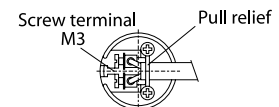
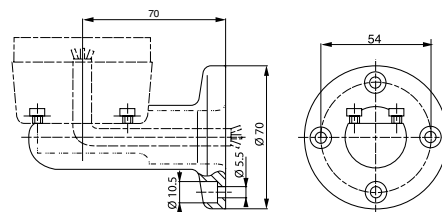
Signal beacons K SB



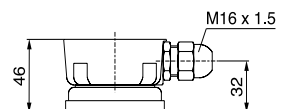
Bracket for surface mounting



Bracket 1-sided mounting



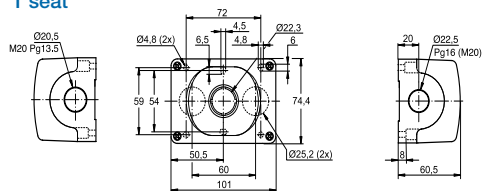
Contact box with magnetic base



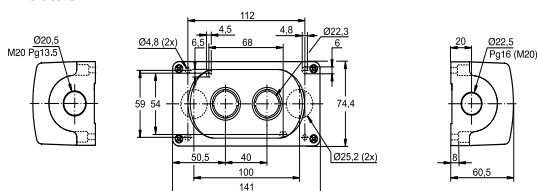
## Approximate dimensions Enclosures

### Plastic enclosures

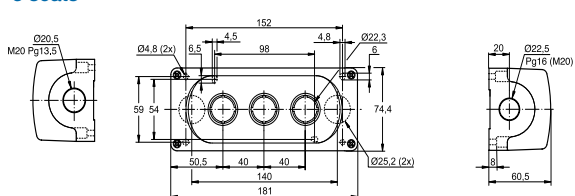
#### 1 seat



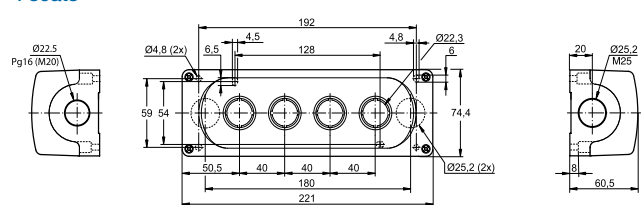
#### 2 seats



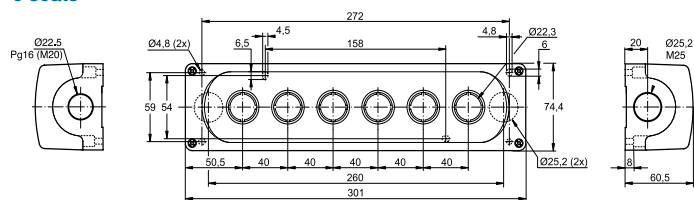
#### 3 seats



#### 4 seats

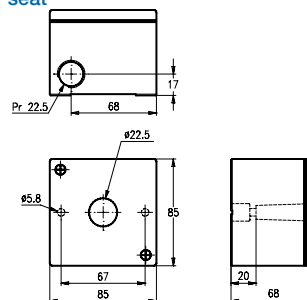


#### 6 seats

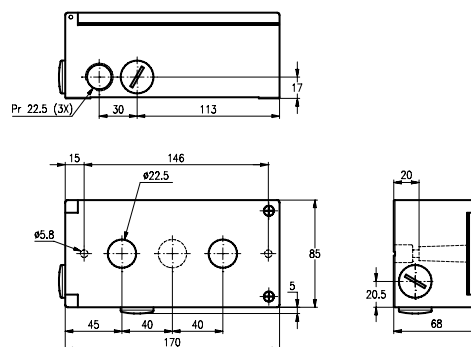


### Metallic enclosures

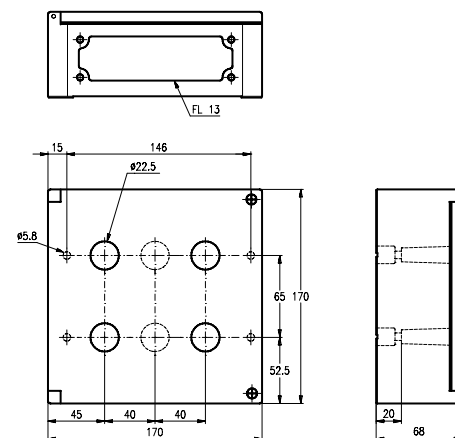
#### 1 seat



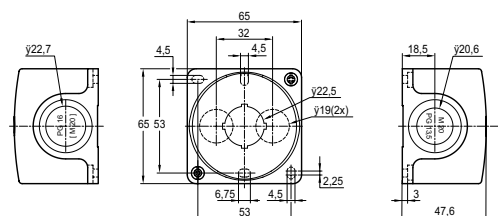
#### 2 or 3 seats



#### 4 or 6 seats



### Plastic enclosure for Compact Range



# Degrees of protection

## General

In an installation, the degree of protection required for electrical equipment depends on the environmental characteristics. The degree of protection, ensured by the enclosure of equipment or by the cubicle containing the equipment is expressed by the IP code which gives the level of protection against access to hazardous parts, the ingress of foreign bodies and/or the ingress of water, in compliance with IEC 60529, IEC 60947-1.

Besides the IP symbol, the complete code has two figures followed (optionally) by two additional letters. A short description of the elements used in IP coding is given below.

| IP... code           | Figures or letters | Specifications for installation protection               | Protection of persons                          |
|----------------------|--------------------|----------------------------------------------------------|------------------------------------------------|
| <b>First Figure</b>  |                    | <b>Against ingress of foreign bodies</b>                 | <b>Against access to hazardous parts with:</b> |
|                      | 0                  | No protection                                            | No protection                                  |
|                      | 1                  | Diameter > 50 mm                                         | Back of hand                                   |
|                      | 2                  | Diameter > 12.5 mm                                       | Finger                                         |
|                      | 3                  | Diameter > 2.5 mm                                        | Tool                                           |
|                      | 4                  | Diameter > 1 mm                                          | Wire                                           |
|                      | 5                  | Limited protection against dust                          | Wire                                           |
|                      | 6                  | Total protection against dust                            | Wire                                           |
| <b>Second Figure</b> |                    | <b>Against entrance of water having a harmful effect</b> |                                                |
|                      | 0                  | No protection                                            |                                                |
|                      | 1                  | Vertical dripping                                        |                                                |
|                      | 2                  | Dripping at a vertical angle of < 15°                    |                                                |
|                      | 3                  | Rain at a vertical angle of < 60°                        |                                                |
|                      | 4                  | Splashing                                                |                                                |
|                      | 5                  | Low pressure water jet                                   |                                                |
|                      | 6                  | Powerful water jets                                      |                                                |
|                      | 7                  | Temporary immersion                                      |                                                |
|                      | 8                  | Permanent immersion                                      |                                                |
|                      | 9K*                | High Pressure, High Temperature washdown                 |                                                |

**Note:** The Catalog number of enclosure or cubicle in which the equipment must be installed prevails with respect to the degree of protection.

\*) According to DIN 400 50-9