

8 - Pilot devices



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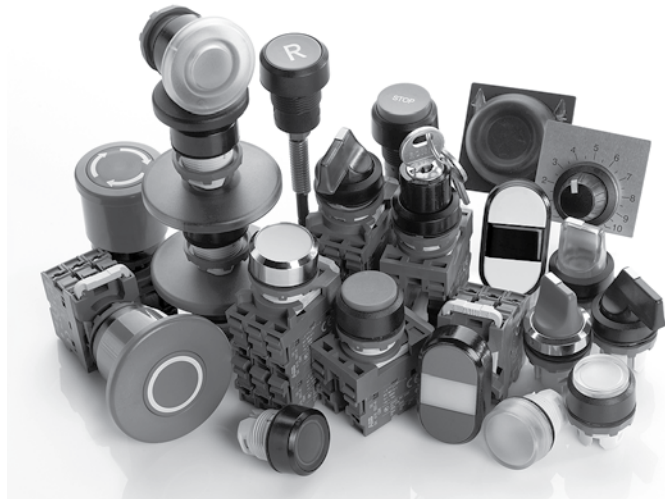
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Modular range Pilot devices

ABB

Modular range
22mm



8

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

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

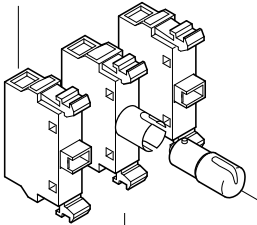
- Buzzer, continuous and pulsating
- 5 kΩ and 10 kΩ potentiometers
- Definite purpose pushbuttons
- Reset pushbuttons
- Broad range of accessories

General information Mounting

Exploded view

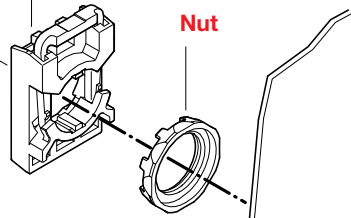
Contact block

Single pole with making or breaking contact



Holder

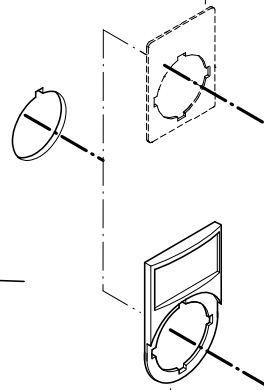
Available either for three or five blocks in one single row. Additional blocks can be stacked on holders for three blocks.



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.

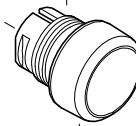


Lamp block

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.



Legend plate holder

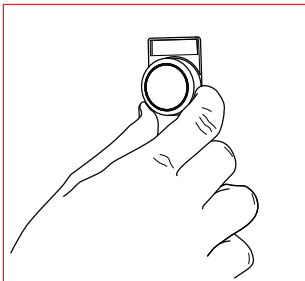
Of black plastic. Insert of brushed aluminum. Please, see the chapter 'legend plates' for more information.

Bezels

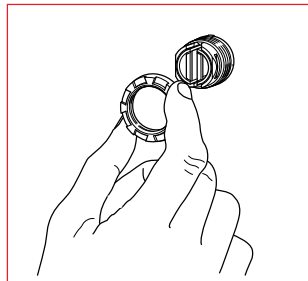
Pushbuttons, selector switches and toggle switches with bezel in black plastic, chrome metal are available.

8

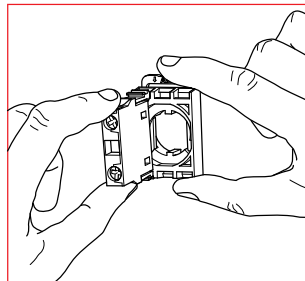
Easy to mount



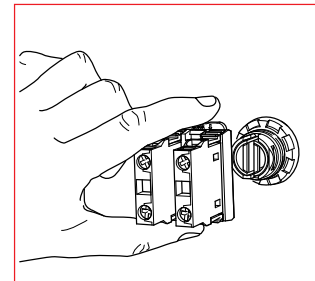
The operator is to be inserted from the front.....



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

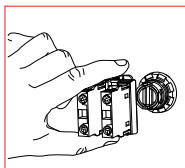
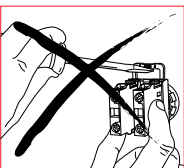


The contact blocks/lamp block are then snapped on to the holder...



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

...and to remove



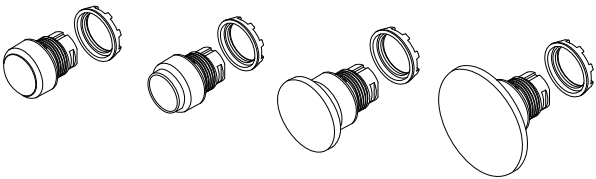
Press down the spring on the holder and pull the holder from the actuator.

Selection Guide

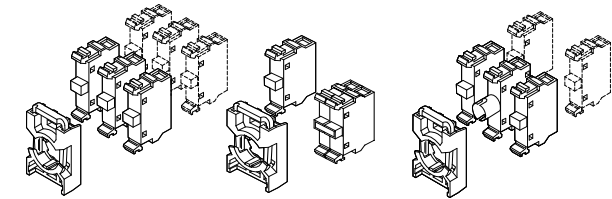
Pilot Devices
Modular Range
22mm

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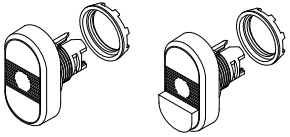
Pushbuttons and Mushroom pushbuttons



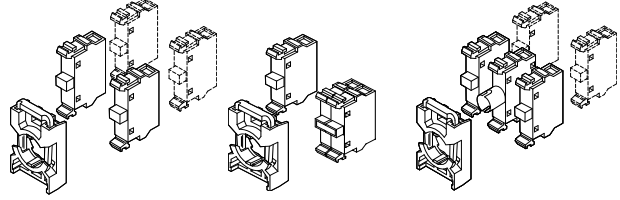
Contact block/lamp block combinations



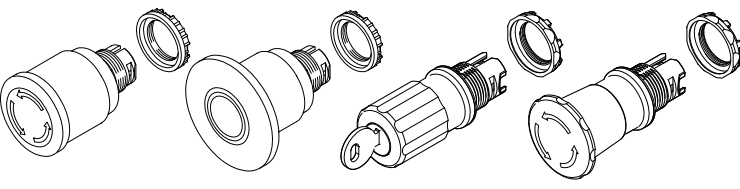
Double pushbuttons



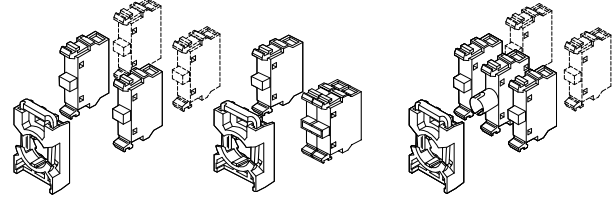
Contact block/lamp block combinations



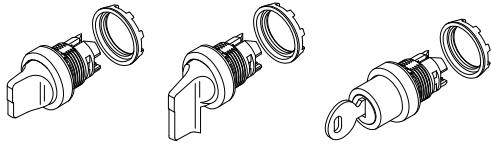
Emergency stop pushbuttons



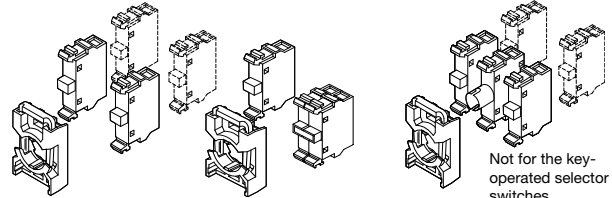
Contact block/lamp block combinations



Selector switches

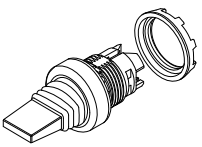


Contact block/lamp block combinations

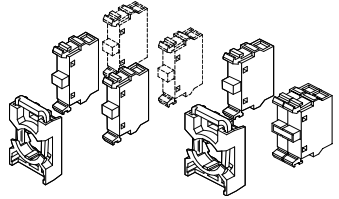


Not for the key-operated selector switches

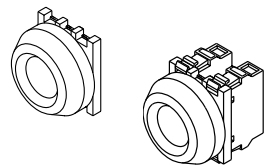
Toggle switches



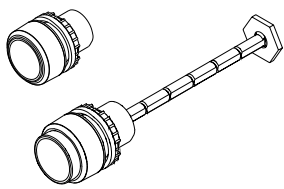
Contact block combinations



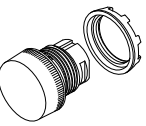
Definite purpose push-buttons



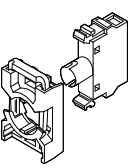
Reset pushbuttons




Pilot lights




Lamp block combination



Buzzers



Potentiometers

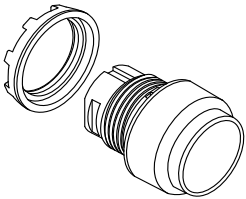
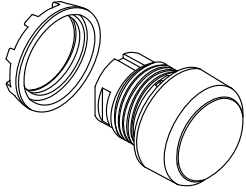


Flush and extended pushbuttons

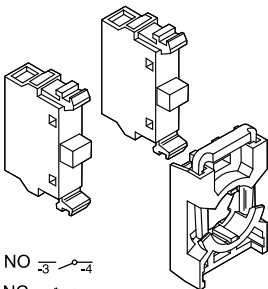
Non-illuminated

Momentary and maintained

8



Bezel in black plastic as standard
Bezel in metal:
Replace '1' in the:
Cat No. MPX-1 0X
3 for metal bezel



NO $\begin{matrix} \text{---} \\ \text{---} \end{matrix} \begin{matrix} \text{---} \\ \text{---} \end{matrix}$
NC $\begin{matrix} \text{---} \\ \text{---} \end{matrix} \begin{matrix} \text{---} \\ \text{---} \end{matrix}$

Operator ...

Description	Catalog No.	Ref. Code	List Price
with flush button			
Momentary			
Red	MP1-10R	1SFA 611 100 R1001	\$ 6.10
Green	MP1-10G	1SFA 611 100 R1002	
Yellow	MP1-10Y	1SFA 611 100 R1003	
Blue	MP1-10L	1SFA 611 100 R1004	
White	MP1-10W	1SFA 611 100 R1005	
Black	MP1-10B	1SFA 611 100 R1006	
Clear	MP1-10C	1SFA 611 100 R1008	
Maintained			
Red	MP2-10R	1SFA 611 101 R1001	17.30
Green	MP2-10G	1SFA 611 101 R1002	
Yellow	MP2-10Y	1SFA 611 101 R1003	
Blue	MP2-10L	1SFA 611 101 R1004	
White	MP2-10W	1SFA 611 101 R1005	
Black	MP2-10B	1SFA 611 101 R1006	
Clear	MP2-10C	1SFA 611 101 R1008	

with extended button

Momentary			
Red	MP3-10R	1SFA 611 102 R1001	6.10
Green	MP3-10G	1SFA 611 102 R1002	
Yellow	MP3-10Y	1SFA 611 102 R1003	
Blue	MP3-10L	1SFA 611 102 R1004	
White	MP3-10W	1SFA 611 102 R1005	
Black	MP3-10B	1SFA 611 102 R1006	
Clear	MP3-10C	1SFA 611 102 R1008	
Maintained			
Red	MP4-10R	1SFA 611 103 R1001	17.30
Green	MP4-10G	1SFA 611 103 R1002	
Yellow	MP4-10Y	1SFA 611 103 R1003	
Blue	MP4-10L	1SFA 611 103 R1004	
White	MP4-10W	1SFA 611 103 R1005	
Black	MP4-10B	1SFA 611 103 R1006	
Clear	MP4-10C	1SFA 611 103 R1008	

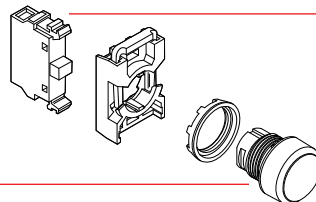
Contact blocks, and holder

Blocks	Catalog No.	Ref. Code	List Price
1 NO with holder	MCBH-10	1SFA 611 605 R1101	\$ 10.00
1 NC with holder	MCBH-01	1SFA 611 605 R1110	10.00
2 NO with holder	MCBH-20	1SFA 611 605 R1102	18.00
2 NC with holder	MCBH-02	1SFA 611 605 R1120	18.00
1 NO + 1 NC with holder	MCBH-11	1SFA 611 605 R1111	18.00
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00

Ordering example

Requested: A modular pushbutton, momentary,
with red flush button and one NO contact.

Ref.: 1 piece of MP1-10R + 1 piece of MCBH-10

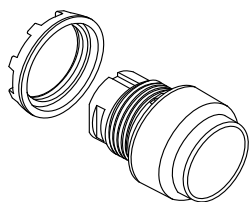
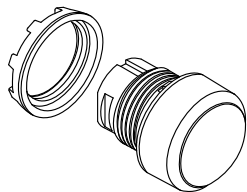


Flush and extended pushbuttons

Illuminated

Momentary and maintained

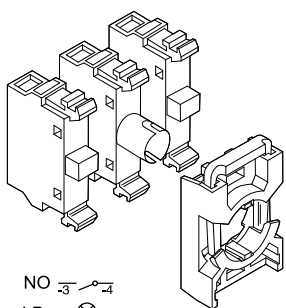
Bulb max 1.2 W



Bezel in black plastic as standard

Bezel in metal:

Replace '1' in the
Catalog No. MPX-1 0X
3 for metal bezel



NO $\frac{3}{-}$ $\frac{4}{-}$
LB $\frac{x1}{\otimes}$ $\frac{x2}{\otimes}$
NC $\frac{1}{-}$ $\frac{2}{-}$

Operator ...

Description	Catalog No.	Ref. Code	List Price
-------------	-------------	-----------	------------

with flush button

Momentary ①

Red	MP1-11R	1SFA 611 100 R1101	\$ 6.10
Green	MP1-11G	1SFA 611 100 R1102	
Yellow	MP1-11Y	1SFA 611 100 R1103	
Blue	MP1-11L	1SFA 611 100 R1104	
White	MP1-11W	1SFA 611 100 R1105	
Clear	MP1-11C	1SFA 611 100 R1108	

Maintained ①③

Red	MP2-11R	1SFA 611 101 R1101	17.30
Green	MP2-11G	1SFA 611 101 R1102	
Yellow	MP2-11Y	1SFA 611 101 R1103	
Blue	MP2-11L	1SFA 611 101 R1104	
White	MP2-11W	1SFA 611 101 R1105	
Clear	MP2-11C	1SFA 611 101 R1108	

with extended button

Momentary ①

Red	MP3-11R	1SFA 611 102 R1101	6.10
Green	MP3-11G	1SFA 611 102 R1102	
Yellow	MP3-11Y	1SFA 611 102 R1103	
Blue	MP3-11L	1SFA 611 102 R1104	
White	MP3-11W	1SFA 611 102 R1105	
Clear	MP3-11C	1SFA 611 102 R1108	

Maintained ①③

Red	MP4-11R	1SFA 611 103 R1101	17.30
Green	MP4-11G	1SFA 611 103 R1102	
Yellow	MP4-11Y	1SFA 611 103 R1103	
Blue	MP4-11L	1SFA 611 103 R1104	
White	MP4-11W	1SFA 611 103 R1105	
Clear	MP4-11C	1SFA 611 103 R1108	

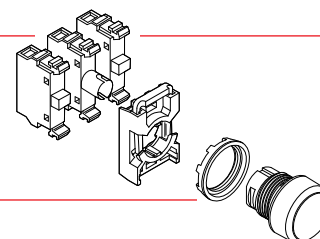
Contact blocks, lamp block and holder ②

Blocks	Catalog No.	Ref. Code	List Price
1 NO + 1 LB with holder	MCBH-101	1SFA 611 605 R1201	\$ 27.50
1 NC + 1 LB with holder	MCBH-011	1SFA 611 605 R1210	27.50
2 NO + 1 LB with holder	MCBH-201	1SFA 611 605 R1202	35.50
2 NC + 1 LB with holder	MCBH-021	1SFA 611 605 R1220	35.50
1 NO + 1 NC + 1 LB with holder	MCBH-111	1SFA 611 605 R1211	35.50
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Lamp block for 2 W, max 230 V AC/DC bulb or LED	MLB-1	1SFA 611 620 R1001	17.50
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00

Ordering example

Requested: A modular pushbutton, maintained and illuminated with green flush button and one NO + one NC contact.

Ref.: 1 piece of MP2-11G + 1 piece of MCBH-111
Bulb - see accessories



- ① No contact block in the center position, reserved for lamp block
- ② Lamp block MLB-1. Bulb not included. For other lamp blocks see Accessories.
- ③ Bulb max 1.2 W, not included.

Double pushbuttons Non-illuminated

Operator ...

Upper button		Lower button		Catalog No.	Ref. Code	List Price
Color	Text	Color	Text			
with flush buttons ①						
Green	No text	Red	No text	MPD1-11B	1SFA 611 130 R1106	\$ 18.00
	I	O	O	MPD2-11B	1SFA 611 131 R1106	21.00
	ON	OFF	OFF	MPD3-11B	1SFA 611 132 R1106	21.00
	START	STOP	STOP	MPD4-11B	1SFA 611 133 R1106	21.00
White	No text	Black	No text	MPD5-11B	1SFA 611 134 R1106	18.00
	I	O	O	MPD6-11B	1SFA 611 135 R1106	21.00
	ON	OFF	OFF	MPD7-11B	1SFA 611 136 R1106	21.00
	START	STOP	STOP	MPD8-11B	1SFA 611 137 R1106	21.00
with extended lower button ①						
Green	No text	Red	No text	MPD12-11B	1SFA 611 141 R1106	18.00
	I	O	O	MPD13-11B	1SFA 611 142 R1106	21.00
	ON	OFF	OFF	MPD14-11B	1SFA 611 143 R1106	21.00
	START	STOP	STOP	MPD15-11B	1SFA 611 144 R1106	21.00
White	No text	Black	No text	MPD16-11B	1SFA 611 145 R1106	18.00
	I	O	O	MPD17-11B	1SFA 611 146 R1106	21.00
	ON	OFF	OFF	MPD18-11B	1SFA 611 147 R1106	21.00
	START	STOP	STOP	MPD19-11B	1SFA 611 148 R1106	21.00

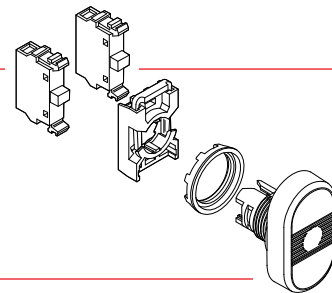
Contact blocks, and holder

Blocks	Catalog No.	Ref. Code	List Price
2 NO with holder	MCBH-20	1SFA 611 605 R1102	\$ 18.00
2 NC with holder	MCBH-02	1SFA 611 605 R1120	
1 NO + 1 NC with holder	MCBH-11	1SFA 611 605 R1111	
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00

Ordering example – Double pushbutton

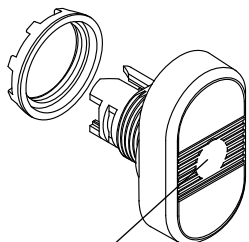
Requested: A non-illuminated double pushbutton, Green/Red,
No text, with 2 NO blocks

Ref.: 1 piece of MPD1-11B + 1 piece of MCBH-20

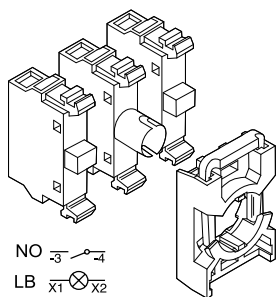


① No contact block in the center position.

Double pushbuttons Illuminated



Lens colors:
Red
Green
Yellow
Clear



NO $\overline{3}$ - 4
LB $\overline{X1}$ - $\overline{X2}$
NC $\overline{1}$ - $\overline{2}$

Operator ...

Upper button		Lower button		Catalog No.	Ref. Code	List Price
Color	Text	Color	Text			
with flush buttons ①						
Red lens						
Green	No text	Red	No text	MPD1-11R	1SFA 611 130 R1101	\$ 26.00
	I		O	MPD2-11R	1SFA 611 131 R1101	29.00
	ON		OFF	MPD3-11R	1SFA 611 132 R1101	29.00
	START		STOP	MPD4-11R	1SFA 611 133 R1101	29.00
White	No text	Black	No text	MPD5-11R	1SFA 611 134 R1101	26.00
	I		O	MPD6-11R	1SFA 611 135 R1101	29.00
	ON		OFF	MPD7-11R	1SFA 611 136 R1101	29.00
	START		STOP	MPD8-11R	1SFA 611 137 R1101	29.00
Green lens						
Green	No text	Red	No text	MPD1-11G	1SFA 611 130 R1102	26.00
	I		O	MPD2-11G	1SFA 611 131 R1102	29.00
	ON		OFF	MPD3-11G	1SFA 611 132 R1102	29.00
	START		STOP	MPD4-11G	1SFA 611 133 R1102	29.00
White	No text	Black	No text	MPD5-11G	1SFA 611 134 R1102	26.00
	I		O	MPD6-11G	1SFA 611 135 R1102	29.00
	ON		OFF	MPD7-11G	1SFA 611 136 R1102	29.00
	START		STOP	MPD8-11G	1SFA 611 137 R1102	29.00
Yellow lens						
Green	No text	Red	No text	MPD1-11Y	1SFA 611 130 R1103	26.00
	I		O	MPD2-11Y	1SFA 611 131 R1103	29.00
	ON		OFF	MPD3-11Y	1SFA 611 132 R1103	29.00
	START		STOP	MPD4-11Y	1SFA 611 133 R1103	29.00
White	No text	Black	No text	MPD5-11Y	1SFA 611 134 R1103	26.00
	I		O	MPD6-11Y	1SFA 611 135 R1103	29.00
	ON		OFF	MPD7-11Y	1SFA 611 136 R1103	29.00
	START		STOP	MPD8-11Y	1SFA 611 137 R1103	29.00
Clear lens						
Green	No text	Red	No text	MPD1-11C	1SFA 611 130 R1108	26.00
	I		O	MPD2-11C	1SFA 611 131 R1108	29.00
	ON		OFF	MPD3-11C	1SFA 611 132 R1108	29.00
	START		STOP	MPD4-11C	1SFA 611 133 R1108	29.00
White	No text	Black	No text	MPD5-11C	1SFA 611 134 R1108	26.00
	I		O	MPD6-11C	1SFA 611 135 R1108	29.00
	ON		OFF	MPD7-11C	1SFA 611 136 R1108	29.00
	START		STOP	MPD8-11C	1SFA 611 137 R1108	29.00

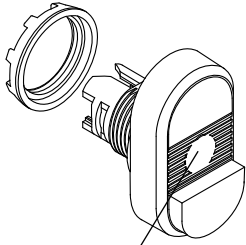
Contact blocks, lamp block and holder ②

Blocks	Catalog No.	Ref. Code	List Price
2 NO + 1 LB with holder	MCBH-201	1SFA 611 605 R1202	\$ 35.50
2 NC + 1 LB with holder	MCBH-021	1SFA 611 605 R1220	
1 NO + 1 NC + 1 LB with holder	MCBH-111	1SFA 611 605 R1211	
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Lamp block for 2 W, max 230 V AC/DC bulb or LED	MLB-1	1SFA 611 620 R1001	17.50
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00

① No contact block in the center position, reserved for lamp block.

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

Double pushbuttons Illuminated



Lens colors:
Red
Green
Yellow
Clear

Operator ...

Upper button		Lower button		Catalog No.	Ref. Code	List Price
Color	Text	Color	Text			

with extended lower button ①

Red lens

Green	No text	Red	No text	MPD12-11R	1SFA 611 141 R1101	\$ 26.00			
			O				MPD13-11R	1SFA 611 142 R1101	29.00
	ON		OFF				MPD14-11R	1SFA 611 143 R1101	29.00
	START		STOP				MPD15-11R	1SFA 611 144 R1101	29.00
White	No text	Black	No text	MPD16-11R	1SFA 611 145 R1101	26.00			
			O				MPD17-11R	1SFA 611 146 R1101	29.00
	ON		OFF				MPD18-11R	1SFA 611 147 R1101	29.00
	START		STOP				MPD19-11R	1SFA 611 148 R1101	29.00

Green lens

Green	No text	Red	No text	MPD12-11G	1SFA 611 141 R1102	26.00			
			O				MPD13-11G	1SFA 611 142 R1102	29.00
	ON		OFF				MPD14-11G	1SFA 611 143 R1102	29.00
	START		STOP				MPD15-11G	1SFA 611 144 R1102	29.00
White	No text	Black	No text	MPD16-11G	1SFA 611 145 R1102	26.00			
			O				MPD17-11G	1SFA 611 146 R1102	29.00
	ON		OFF				MPD18-11G	1SFA 611 147 R1102	29.00
	START		STOP				MPD19-11G	1SFA 611 148 R1102	29.00

Yellow lens

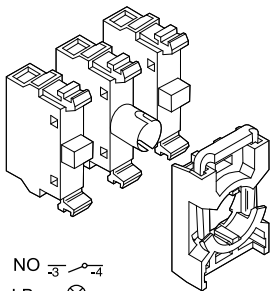
Green	No text	Red	No text	MPD12-11Y	1SFA 611 141 R1103	26.00			
			O				MPD13-11Y	1SFA 611 142 R1103	29.00
	ON		OFF				MPD14-11Y	1SFA 611 143 R1103	29.00
	START		STOP				MPD15-11Y	1SFA 611 144 R1103	29.00
White	No text	Black	No text	MPD16-11Y	1SFA 611 145 R1103	26.00			
			O				MPD17-11Y	1SFA 611 146 R1103	29.00
	ON		OFF				MPD18-11Y	1SFA 611 147 R1103	29.00
	START		STOP				MPD19-11Y	1SFA 611 148 R1103	29.00

Clear lens

Green	No text	Red	No text	MPD12-11C	1SFA 611 141 R1108	26.00			
			O				MPD13-11C	1SFA 611 142 R1108	29.00
	ON		OFF				MPD14-11C	1SFA 611 143 R1108	29.00
	START		STOP				MPD15-11C	1SFA 611 144 R1108	29.00
White	No text	Black	No text	MPD16-11C	1SFA 611 145 R1108	26.00			
			O				MPD17-11C	1SFA 611 146 R1108	29.00
	ON		OFF				MPD18-11C	1SFA 611 147 R1108	29.00
	START		STOP				MPD19-11C	1SFA 611 148 R1108	29.00

Contact blocks, lamp block and holder ②

Blocks	Catalog No.	Ref. Code	List Price
2 NO + 1 LB with holder	MCBH-201	1SFA 611 605 R1202	\$ 35.50
2 NC + 1 LB with holder	MCBH-021	1SFA 611 605 R1220	35.50
1 NO + 1 NC + 1 LB with holder	MCBH-111	1SFA 611 605 R1211	35.50
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Lamp block for 2 W, max 230 V AC/DC bulb or LED	MLB-1	1SFA 611 620 R1001	17.50
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00



NO $\begin{matrix} \text{---} \\ \text{---} \end{matrix}$
LB $\begin{matrix} \text{---} \\ \text{---} \end{matrix}$
NC $\begin{matrix} \text{---} \\ \text{---} \end{matrix}$

① No contact block in the center position, reserved for lamp block.

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

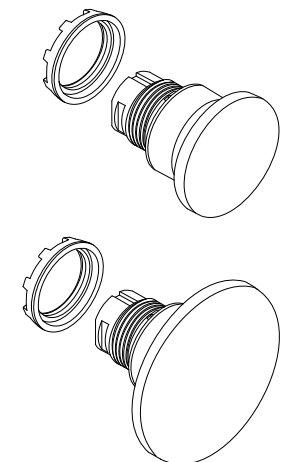
Mushroom pushbuttons

Non-illuminated and illuminated

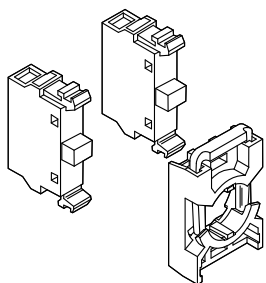
Momentary

Operator ...

Operator material	Button color	Catalog No.	Ref. Code	List Price
non-illuminated				
Ø 40 mm				
Plastic	Red	MPM1-10R	1SFA 611 124 R1001	\$ 16.00
	Yellow	MPM1-10Y	1SFA 611 124 R1003	16.00
	Black	MPM1-10B	1SFA 611 124 R1006	16.00
Ø 60 mm				
Plastic	Red	MPM2-10R	1SFA 611 125 R1001	20.00
	Yellow	MPM2-10Y	1SFA 611 125 R1003	20.00
	Black	MPM2-10B	1SFA 611 125 R1006	20.00
illuminated ①				
Ø 40 mm				
Plastic	Green	MPM1-11G	1SFA 611 124 R1102	16.00
	Red	MPM1-11R	1SFA 611 124 R1101	15.50
	Yellow	MPM1-11Y	1SFA 611 124 R1103	15.50
Ø 60 mm				
Plastic	Red	MPM2-11R	1SFA 611 125 R1101	20.00
	Yellow	MPM2-11Y	1SFA 611 125 R1103	20.00



Bezel in black plastic as standard
Bezel in metal:
Replace '1' in the:
Catalog No. MPMX-1 0X
Ref. Code 1SFA611XXX R 1XXX
3 for metal bezel



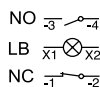
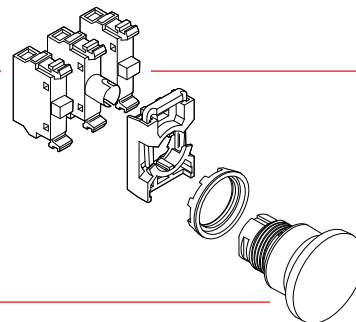
Contact blocks, lamp block and holder ②

Blocks	Catalog No.	Ref. Code	List Price
1 NO with holder	MCBH-10	1SFA 611 605 R1101	\$ 10.00
1 NC with holder	MCBH-01	1SFA 611 605 R1110	10.00
2 NO with holder	MCBH-20	1SFA 611 605 R1102	18.00
2 NC with holder	MCBH-02	1SFA 611 605 R1120	18.00
1 NO + 1 NC with holder	MCBH-11	1SFA 611 605 R1111	18.00
1 NO + 1 LB with holder	MCBH-101	1SFA 611 605 R1201	27.50
1 NC + 1 LB with holder	MCBH-011	1SFA 611 605 R1210	27.50
2 NO + 1 LB with holder	MCBH-201	1SFA 611 605 R1202	35.50
2 NC + 1 LB with holder	MCBH-021	1SFA 611 605 R1220	35.50
1 NO + 1 NC + 1 LB with holder	MCBH-111	1SFA 611 605 R1211	35.50
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Lamp block for 2 W, max 230 V AC/DC bulb or LED	MLB-1	1SFA 611 620 R1001	17.50
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00

Ordering example – Mushroom Pushbutton

Requested: A modular mushroom pushbutton, Ø 40 mm, illuminated, red, with one NO + one NC contact and a standard lamp block

Ref.: 1 piece of MPM1-11R + 1 piece of MCBH-111
Bulb - see accessories



① No contact block in the center position, reserved for lamp block.

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

Emergency stop pushbuttons

Non-illuminated, 30mm & 40mm head

Fulfills IEC 60947-5-5

Operator

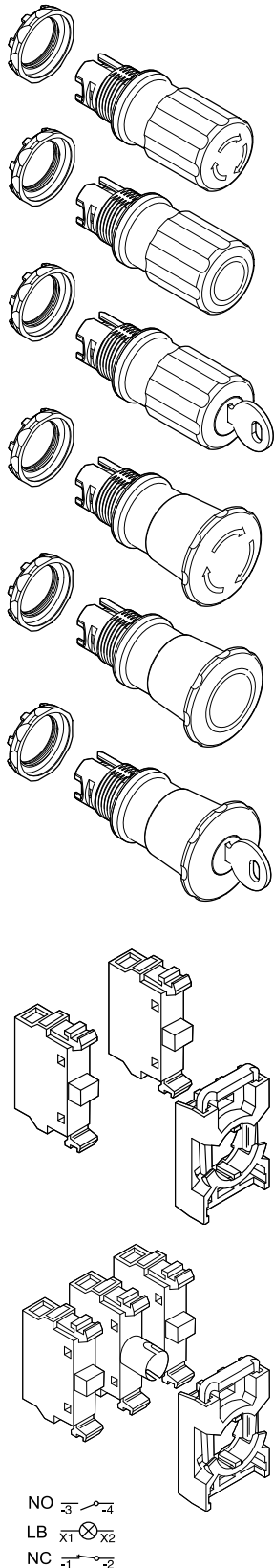
Operator function	Button color and material	Catalog No.	Ref. Code	List Price
Non-illuminated ø 30mm				
Twist release	Red, plastic	MPET3-10R	1SFA611520R1001	\$ 26.00
Pull release	Red, plastic	MPEP3-10R	1SFA611521R1001	26.00
Key release				
(Key code 71, Ronis 455)	Red, plastic	MPEK3-11R	1SFA611522R1101	40.00
(Key code 72, Ronis 421)	Red, plastic	MPEK3-12R	1SFA611522R1201	40.00
(Key code 73, Ronis 3433-E)	Red, plastic	MPEK3-13R	1SFA611522R1301	40.00
Non-illuminated ø 40mm				
Twist release	Red, plastic	MPET4-10R	1SFA611523R1001	30.00
Pull release	Red, plastic	MPEP4-10R	1SFA611524R1001	30.00
Key release				
(Key code 71, Ronis 455)	Red, plastic	MPEK4-11R	1SFA611525R1101	48.00
(Key code 72, Ronis 421)	Red, plastic	MPEK4-12R	1SFA611525R1201	48.00
(Key code 73, Ronis 3433-E)	Red, plastic	MPEK4-13R	1SFA611525R1301	48.00

Contact blocks and holder

Blocks	Catalog No.	Ref. Code	List Price
1 NO with holder	MCBH-10	1SFA 611 605 R1101	\$ 10.00
1 NC with holder	MCBH-01	1SFA 611 605 R1110	10.00
2 NO with holder	MCBH-20	1SFA 611 605 R1102	18.00
2 NC with holder	MCBH-02	1SFA 611 605 R1120	18.00
1 NO + 1 NC with holder	MCBH-11	1SFA 611 605 R1111	18.00
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00

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

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



Emergency stop pushbuttons

Non-illuminated and illuminated, 40mm & 60mm head

Fulfills IEC 60947-5-5

Operator ...

Operator function	Button color and material	Catalog No.	Ref. Code	List Price
Non-illuminated				
Ø 40 mm				
Twist release	Red, plastic	MPMT3-10R	1SFA 611 510 R1001	\$ 34.00
Pull release	Red, plastic	MPMP3-10R	1SFA 611 511 R1001	
Twist release	Black, plastic	MPMT3-10B	1SFA 611 510 R1006	
Pull release	Black, plastic	MPMP3-10B	1SFA 611 511 R1006	
Ø 60 mm				
Twist release	Red, plastic	MPMT4-10R	1SFA 611 510 R1006	46.00
Pull release	Red, plastic	MPMP4-10R	1SFA 611 511 R1006	
illuminated ①				
Ø 40 mm				
Twist release	Red, plastic	MPMT3-11R	1SFA 611 510 R1101	34.00
Pull release	Red, plastic	MPMP3-11R	1SFA 611 511 R1101	
Ø 60 mm				
Twist release	Red, plastic	MPMT4-11R	1SFA 611 513 R1101	46.00
Pull release	Red, plastic	MPMP4-11R	1SFA 611 514 R1101	

For compact E-Stops, see page 8.31.

Contact blocks, lamp block and holder ②

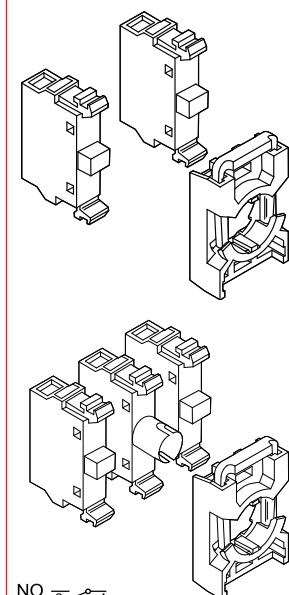
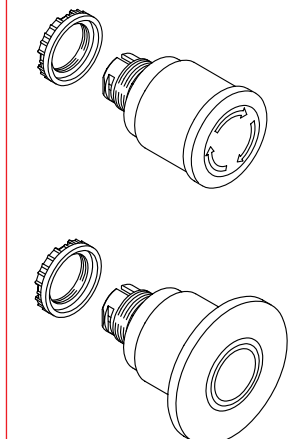
Blocks	Catalog No.	Ref. Code	List Price
1 NO with holder	MCBH-10	1SFA 611 605 R1101	\$ 10.00
1 NC with holder	MCBH-01	1SFA 611 605 R1110	10.00
2 NO with holder	MCBH-20	1SFA 611 605 R1102	18.00
2 NC with holder	MCBH-02	1SFA 611 605 R1120	18.00
1 NO + 1 NC with holder	MCBH-11	1SFA 611 605 R1111	18.00
1 NO + 1 LB with holder	MCBH-101	1SFA 611 605 R1201	27.50
1 NC + 1 LB with holder	MCBH-011	1SFA 611 605 R1210	27.50
2 NO + 1 LB with holder	MCBH-201	1SFA 611 605 R1202	35.50
2 NC + 1 LB with holder	MCBH-021	1SFA 611 605 R1220	35.50
1 NO + 1 NC + 1 LB with holder	MCBH-111	1SFA 611 605 R1211	35.50
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Lamp block for 2 W, max 230 V AC/DC bulb or LED	MLB-1	1SFA 611 620 R1001	17.50
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00

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

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

① No contact in the center position







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

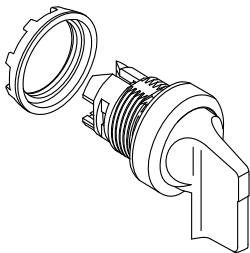
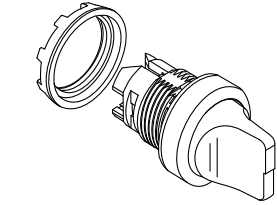


NO $\overline{3}$ $\overline{4}$
LB $\overline{x1}$ $\overline{x2}$
NC $\overline{1}$ $\overline{2}$

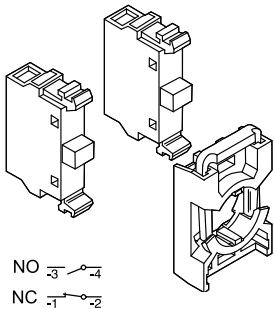
2-position selector switches Non-illuminated

Operator ...

Symbol	Handle color	Catalog No.	Ref. Code	List Price
with short handle ①				
Maintained				
	Red	M2SS1-10R	1SFA 611 200 R1001	\$ 11.00
	Black	M2SS1-10B	1SFA 611 200 R1006	
	Grey	M2SS1-10U	1SFA 611 200 R1007	
Maintained				
	Red	M2SS2-10R	1SFA 611 201 R1001	\$ 11.00
	Black	M2SS2-10B	1SFA 611 201 R1006	
	Grey	M2SS2-10U	1SFA 611 201 R1007	
Momentary, spring return from C to B				
	Red	M2SS3-10R	1SFA 611 202 R1001	14.00
	Black	M2SS3-10B	1SFA 611 202 R1006	
	Grey	M2SS3-10U	1SFA 611 202 R1007	
with long handle ①				
Maintained				
	Red	M2SS4-10R	1SFA 611 203 R1001	11.00
	Black	M2SS4-10B	1SFA 611 203 R1006	
	Grey	M2SS4-10U	1SFA 611 203 R1007	
Maintained				
	Red	M2SS5-10R	1SFA 611 204 R1001	11.00
	Black	M2SS5-10B	1SFA 611 204 R1006	
	Grey	M2SS5-10U	1SFA 611 200 R1007	
Momentary, spring return from C to B				
	Red	M2SS6-10R	1SFA 611 205 R1001	14.00
	Black	M2SS6-10B	1SFA 611 205 R1006	
	Grey	M2SS6-10U	1SFA 611 205 R1007	



Bezel in black plastic as standard
Bezel in metal:
Replace '1' in the:
Catalog No. M2SSX-1 0X
Ref. Code 1SFA61 XXX R 1XXX
3 for metal bezel



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)

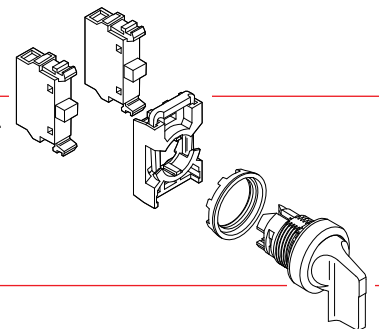
Contact blocks and holder

Blocks	Catalog No.	Ref. Code	List Price
1 NO with holder	MCBH-10	1SFA 611 605 R1101	\$ 10.00
1 NC with holder	MCBH-01	1SFA 611 605 R1110	10.00
2 NO with holder	MCBH-20	1SFA 611 605 R1102	18.00
2 NC with holder	MCBH-02	1SFA 611 605 R1120	18.00
1 NO + 1 NC with holder	MCBH-11	1SFA 611 605 R1111	18.00
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00

Ordering example

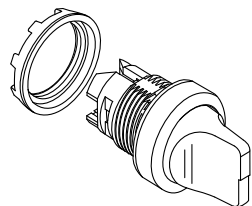
Requested: A non-illuminated modular selector switch. Black.
Maintained.
Handle positions: A and C
With 2 NC contacts

Ref.: 1 piece of M2SS2-10B + 1 piece of MCBH-02



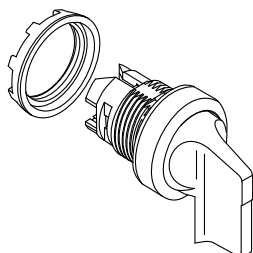
① No contact block in the center position

3-position selector switches Non-illuminated



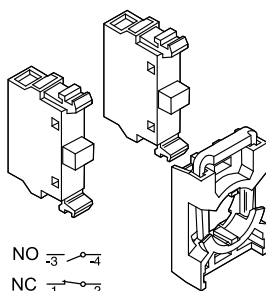
Operator ...

Symbol	Handle color	Catalog No.	Ref. Code	List Price
with short handle ①				
Maintained				
	Red	M3SS1-10R	1SFA 611 210 R1001	\$ 11.00
	Black	M3SS1-10B	1SFA 611 210 R1006	
	Grey	M3SS1-10U	1SFA 611 210 R1007	
Momentary, spring return from A to B and from C to B				
	Red	M3SS2-10R	1SFA 611 211 R1001	14.00
	Black	M3SS2-10B	1SFA 611 211 R1006	
	Grey	M3SS2-10U	1SFA 611 211 R1007	
Momentary, spring return from C to B				
	Red	M3SS3-10R	1SFA 611 212 R1001	14.00
	Black	M3SS3-10B	1SFA 611 212 R1006	
	Grey	M3SS3-10U	1SFA 611 212 R1007	
Momentary, spring return from A to B				
	Red	M3SS7-10R	1SFA 611 216 R1001	14.00
	Black	M3SS7-10B	1SFA 611 216 R1006	
	Grey	M3SS7-10U	1SFA 611 216 R1007	



Symbol	Handle color	Catalog No.	Ref. Code	List Price
with long handle ①				
Maintained				
	Red	M3SS4-10R	1SFA 611 213 R1001	11.00
	Black	M3SS4-10B	1SFA 611 213 R1006	
	Grey	M3SS4-10U	1SFA 611 213 R1007	
Momentary, spring return from A to B and from C to B				
	Red	M3SS5-10R	1SFA 611 214 R1001	14.00
	Black	M3SS5-10B	1SFA 611 214 R1006	
	Grey	M3SS5-10U	1SFA 611 214 R1007	
Momentary, spring return from C to B				
	Red	M3SS6-10R	1SFA 611 215 R1001	14.00
	Black	M3SS6-10B	1SFA 611 215 R1006	
	Grey	M3SS6-10U	1SFA 611 215 R1007	
Momentary, spring return from A to B				
	Red	M3SS8-10R	1SFA 611 217 R1001	14.00
	Black	M3SS8-10B	1SFA 611 217 R1006	
	Grey	M3SS8-10U	1SFA 611 217 R1007	

Bezel in black plastic as standard
Bezel in metal:
 Replace '1' in the:
 Catalog No. M3SSX-1 0X
 Ref. Code 1SFA611XXX R 1XXX
 3 for metal bezel



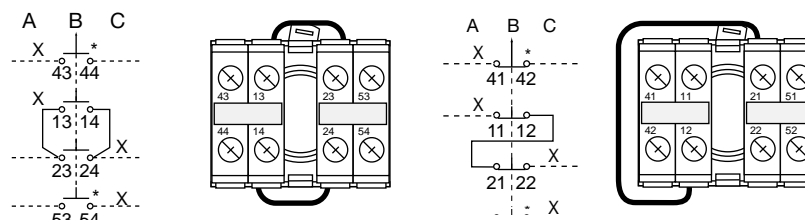
Blocks	Catalog No.	Ref. Code	List Price
1 NO with holder	MCBH-10	1SFA 611 605 R1101	\$ 10.00
1 NC with holder	MCBH-01	1SFA 611 605 R1110	10.00
2 NO with holder	MCBH-20	1SFA 611 605 R1102	18.00
2 NC with holder	MCBH-02	1SFA 611 605 R1120	18.00
1 NO + 1 NC with holder	MCBH-11	1SFA 611 605 R1111	18.00
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00

Contact functions

Block positions as seen from operator front.

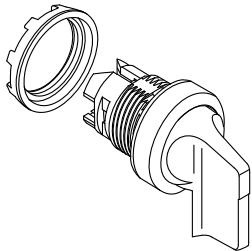
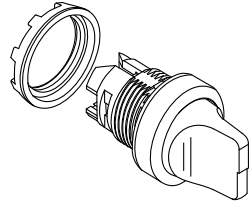
Handle position	Left block	Right block
A	x	o
B	o	o
C	o	x

Center position connection detail

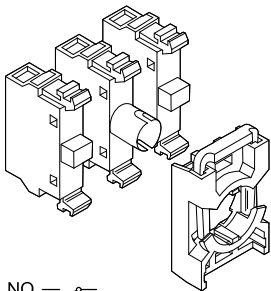


① No contact block in center position

2-position selector switches Illuminated



Bezel in black plastic as standard
Bezel in metal:
Replace '1' in the:
Catalog No. M2SSX-1 0X
Ref. Code 1SFA61 XXX R 1XXX
3 for metal bezel



NO $\frac{3}{-}$ $\frac{4}{-}$
LB $\frac{x1}{\otimes}$ $\frac{x2}{\otimes}$
NC $\frac{-1}{-}$ $\frac{-2}{-}$

Operator ...

Symbol	Handle color	Catalog No.	Ref. Code	List Price
--------	--------------	-------------	-----------	------------

with short handle ①

Maintained



Red	M2SS1-11R	1SFA 611 200 R1101	\$ 17.00
Green	M2SS1-11G	1SFA 611 200 R1102	
Yellow	M2SS1-11Y	1SFA 611 200 R1103	
Blue	M2SS1-11L	1SFA 611 200 R1104	
Clear	M2SS1-11C	1SFA 611 200 R1108	

Maintained



Red	M2SS2-11R	1SFA 611 201 R1101	17.00
Green	M2SS2-11G	1SFA 611 201 R1102	
Yellow	M2SS2-11Y	1SFA 611 201 R1103	
Blue	M2SS2-11L	1SFA 611 201 R1104	
Clear	M2SS2-11C	1SFA 611 201 R1108	

Momentary, spring return from C to B



Red	M2SS3-11R	1SFA 611 202 R1101	26.00
Green	M2SS3-11G	1SFA 611 202 R1102	
Yellow	M2SS3-11Y	1SFA 611 202 R1103	
Blue	M2SS3-11L	1SFA 611 202 R1104	
Clear	M2SS3-11C	1SFA 611 202 R1108	

with long handle ①

Maintained



Red	M2SS4-11R	1SFA 611 203 R1101	17.00
Green	M2SS4-11G	1SFA 611 203 R1102	
Yellow	M2SS4-11Y	1SFA 611 203 R1103	
Blue	M2SS4-11L	1SFA 611 203 R1104	
Clear	M2SS4-11C	1SFA 611 203 R1108	

Maintained



Red	M2SS5-11R	1SFA 611 204 R1101	17.00
Green	M2SS5-11G	1SFA 611 204 R1102	
Yellow	M2SS5-11Y	1SFA 611 204 R1103	
Blue	M2SS5-11L	1SFA 611 204 R1104	
Clear	M2SS5-11C	1SFA 611 204 R1108	

Momentary, spring return from C to B



Red	M2SS6-11R	1SFA 611 205 R1101	26.00
Green	M2SS6-11G	1SFA 611 205 R1102	
Yellow	M2SS6-11Y	1SFA 611 205 R1103	
Blue	M2SS6-11L	1SFA 611 205 R1104	
Clear	M2SS6-11C	1SFA 611 205 R1108	

Contact blocks, lamp block and holder ②

Blocks	Catalog No.	Ref. Code	List Price
1 NO + 1 LB with holder	MCBH-101	1SFA 611 605 R1201	\$ 27.50
1 NC + 1 LB with holder	MCBH-011	1SFA 611 605 R1210	27.50
2 NO + 1 LB with holder	MCBH-201	1SFA 611 605 R1202	35.50
2 NC + 1 LB with holder	MCBH-021	1SFA 611 605 R1220	35.50
1 NO + 1 NC with holder	MCBH-111	1SFA 611 605 R1211	35.50
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Lamp block for 2 W, max 230 V AC/DC bulb or LED	MLB-1	1SFA 611 620 R1001	17.50
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00

Contact functions See Page 8.12

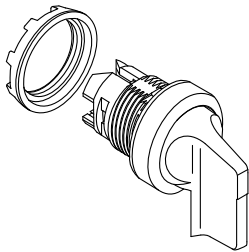
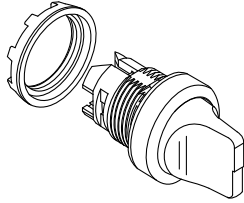
Ordering example See Page 8.12

① No contact block in the center position, reserved for lamp block.

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

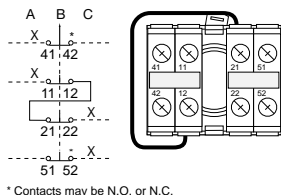
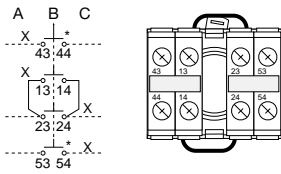
3-position selector switches Illuminated

Pilot Devices
Modular Range
22mm



Bezel in black plastic as standard
Bezel in metal:
Replace '1' in the:
Catalog No. M3SSX-1 0X
3 for metal bezel

Center position connection detail



Operator ...

Symbol	Handle color	Catalog No.	Ref. Code	List Price
with short handle ①				
Maintained				
	Red	M3SS1-11R	1SFA 611 210 R1101	\$ 17.00
	Green	M3SS1-11G	1SFA 611 210 R1102	
	Yellow	M3SS1-11Y	1SFA 611 210 R1103	
	Blue	M3SS1-11L	1SFA 611 210 R1104	
	Clear	M3SS1-11C	1SFA 611 210 R1108	
Momentary, spring return from A to B and from C to B				
	Red	M3SS2-11R	1SFA 611 211 R1101	26.00
	Green	M3SS2-11G	1SFA 611 211 R1102	
	Yellow	M3SS2-11Y	1SFA 611 211 R1103	
	Blue	M3SS2-11L	1SFA 611 211 R1104	
	Clear	M3SS2-11C	1SFA 611 211 R1108	
Momentary, spring return from C to B				
	Red	M3SS3-11R	1SFA 611 212 R1101	26.00
	Green	M3SS3-11G	1SFA 611 212 R1102	
	Yellow	M3SS3-11Y	1SFA 611 212 R1103	
	Blue	M3SS3-11L	1SFA 611 212 R1104	
	Clear	M3SS3-11C	1SFA 611 212 R1108	
Momentary, spring return from A to B				
	Red	M3SS7-11R	1SFA 611 216 R1101	26.00
	Green	M3SS7-11G	1SFA 611 216 R1102	
	Yellow	M3SS7-11Y	1SFA 611 216 R1103	
	Blue	M3SS7-11L	1SFA 611 216 R1104	
	Clear	M3SS7-11C	1SFA 611 216 R1108	
with long handle ①				
Maintained				
	Red	M3SS4-11R	1SFA 611 213 R1101	17.00
	Green	M3SS4-11G	1SFA 611 213 R1102	
	Yellow	M3SS4-11Y	1SFA 611 213 R1103	
	Blue	M3SS4-11L	1SFA 611 213 R1104	
	Clear	M3SS4-11C	1SFA 611 213 R1108	
Momentary, spring return from A to B and from C to B				
	Red	M3SS5-11R	1SFA 611 214 R1101	26.00
	Green	M3SS5-11G	1SFA 611 214 R1102	
	Yellow	M3SS5-11Y	1SFA 611 214 R1103	
	Blue	M3SS5-11L	1SFA 611 214 R1104	
	Clear	M3SS5-11C	1SFA 611 214 R1108	
Momentary, spring return from C to B				
	Red	M3SS6-11R	1SFA 611 215 R1101	26.00
	Green	M3SS6-11G	1SFA 611 215 R1102	
	Yellow	M3SS6-11Y	1SFA 611 215 R1103	
	Blue	M3SS6-11L	1SFA 611 215 R1104	
	Clear	M3SS6-11C	1SFA 611 215 R1108	
Momentary, spring return from A to B				
	Red	M3SS8-11R	1SFA 611 217 R1101	26.00
	Green	M3SS8-11G	1SFA 611 217 R1102	
	Yellow	M3SS8-11Y	1SFA 611 217 R1103	
	Blue	M3SS8-11L	1SFA 611 217 R1104	
	Clear	M3SS8-11C	1SFA 611 217 R1108	

Contact blocks, lamp block and holder See Page 8.13

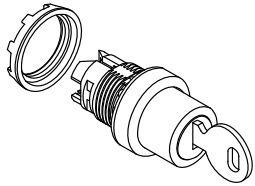
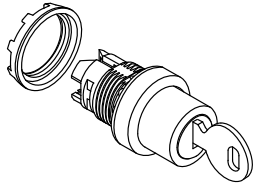
Contact functions See Page 8.13

Ordering example See Page 8.13

① No contact block in the center position, reserved for lamp block.

Key-operated selector switches 2 and 3 positions

8



Bezel in black plastic as standard

Bezel in metal:

Replace '1' in the:

Catalog No. MXSSKX-1 0Δ

Ref. Code 1SFA6112XX R 1XXΔ

3 for metal bezel

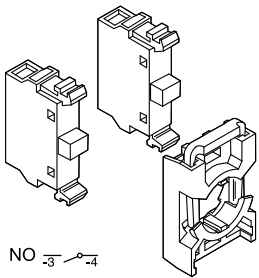
Key codes

71 (standard) Δ = 1

72 Δ = 2

73 Δ = 3

Other (on request)



NO $\overline{3}$ - 4
NC $\overline{1}$ - 2

Operator ...

Symbol	The key can be removed in	Catalog No.	Ref. Code	List Price
2 positions ①				
	in both positions	M2SSK1-10Δ ①	1SFA 611 280 R100Δ ②	\$ 41
Maintained 	in position B only	M2SSK2-10Δ ①	1SFA 611 281 R100Δ ②	
Momentary, spring return from C to B 	in position B only	M2SSK3-10Δ ①	1SFA 611 282 R100Δ ②	
3 positions ①				
	in all positions	M3SSK1-10Δ ①	1SFA 611 283 R100Δ ②	53
Maintained 	in position B only	M3SSK2-10Δ ①	1SFA 611 284 R100Δ ②	
Momentary, spring return from A to B and from C to B 	in position B only	M3SSK3-10Δ ①	1SFA 611 285 R100Δ ②	
Momentary, spring return from C to B 	in position A only	M3SSK4-10Δ ①	1SFA 611 286 R100Δ ③	
Momentary, spring return from C to B 	in all positions	M3SSK5-10Δ ①	1SFA 611 287 R100Δ ②	

Contact blocks and holder

Blocks	Catalog No.	Ref. Code	List Price
2 NO with holder	MCBH-20	1SFA 611 605 R1102	\$ 18.00
2 NC with holder	MCBH-02	1SFA 611 605 R1120	
1 NO + 1 NC with holder	MCBH-11	1SFA 611 605 R1111	
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00

Contact functions

Two positions: See Page 8.12

Three positions: See Page 8.13

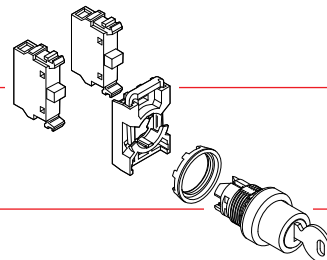
Ordering example

Requested: A key-operated selector switch. Three positions.

Maintained. Key removable in position B. Key code 72.

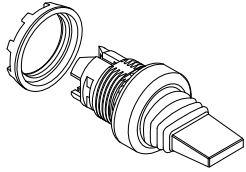
With 2 NC contacts

Ref.: 1 piece of M3SSK2-102 + 1 piece of MCBH-02



① No contact block in the center position

Toggle switches 2 and 3 positions



Operator

Symbol	Bezel	Catalog No.	Ref. Code	List Price
Toggle switch with 2 positions				
Maintained				
	Black plastic	MTS1-10B	1SFA 611 300 R1006	\$ 18.00
	Metal	MTS1-30B	1SFA 611 300 R 3006	

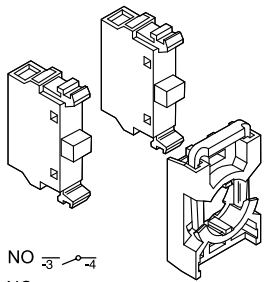
Toggle switch with 3 positions

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

	Black plastic	MTS2-10B	1SFA 611 301 R1006	18.00
	Metal	MTS2-30B	1SFA 611 301 R 3006	
Maintained				
	Black plastic	MTS3-10B	1SFA 611 302 R1006	18.00
	Metal	MTS3-30B	1SFA 611 302 R 3006	

Contact blocks and holder

Blocks	Catalog No.	Ref. Code	List Price
1 NO with holder	MCBH-10	1SFA 611 605 R1101	\$ 10.00
1 NC with holder	MCBH-01	1SFA 611 605 R1110	10.00
2 NO with holder	MCBH-20	1SFA 611 605 R1102	18.00
2 NC with holder	MCBH-02	1SFA 611 605 R1120	18.00
1 NO + 1 NC with holder	MCBH-11	1SFA 611 605 R1111	18.00
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00



NO
NC

Contact block functions

Block positions as seen from operator front.

Two-position maintained switch

Handle position	Left block	Right block
A	O	O
C	x	x

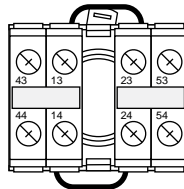
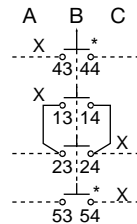
O = not actuated (normal state)
x = actuated (state changed)

Three-position switch

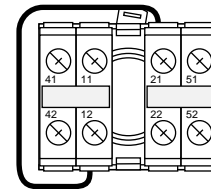
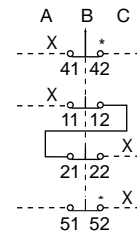
Handle position	Left block	Middle block	Right block
A	O	x	x
B	O	O	O
C	x	x	O

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

Center position connection detail



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



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

Reset pushbuttons

Reset pushbutton without shaft

Lens Color	Text	Catalog No.	Ref. Code	List Price
With flush button				
Red	No text	KPR1-100R	1SFA 616 160 R1001	\$ 8.50
Green	No text	KPR1-100G	1SFA 616 160 R1002	8.50
	II	KPR1-103G	1SFA 616 160 R1032	8.50
Yellow	No text	KPR1-100Y	1SFA 616 160 R1003	8.50
Blue	No text	KPR1-100L	1SFA 616 160 R1004	8.50
	R	KPR1-101L	1SFA 616 160 R1014	8.50
White	No text	KPR1-100W	1SFA 616 160 R1005	8.50
	R	KPR1-101W	1SFA 616 160 R1015	8.50
	I	KPR1-102W	1SFA 616 160 R1025	8.50
	II	KPR1-103W	1SFA 616 160 R1035	8.50
Black	No text	KPR1-100B	1SFA 616 160 R1006	8.50
	RESET	KPR1-104B	1SFA 616 160 R1046	12.00
With extended button				
Red	No text	KPR2-100R	1SFA 616 161 R1001	14.00
	O	KPR2-105R	1SFA 616 161 R1051	
White	No text	KPR2-100W	1SFA 616 161 R1005	
Black	No text	KPR2-100B	1SFA 616 161 R1006	
	O	KPR2-105B	1SFA 616 161 R1056	

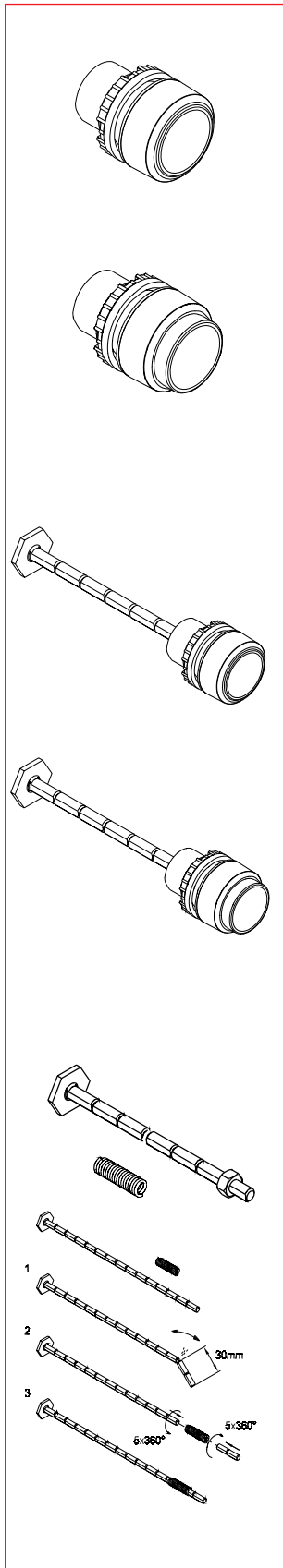
Reset pushbutton with 180mm shaft The shaft can be cut to desired length

Lens Color	Text	Catalog No.	Ref. Code	List Price
With flush button				
Red	No text	KPR3-100R	1SFA 616 162 R1001	\$ 10.00
Green	No text	KPR3-100G	1SFA 616 162 R1002	10.00
	II	KPR3-103G	1SFA 616 162 R1032	11.00
Yellow	No text	KPR3-100Y	1SFA 616 162 R1003	11.00
Blue	No text	KPR3-100L	1SFA 616 162 R1004	10.00
	R	KPR3-101L	1SFA 616 162 R1014	11.00
White	No text	KPR3-100W	1SFA 616 162 R1005	10.00
	R	KPR3-101W	1SFA 616 162 R1015	11.00
	I	KPR3-102W	1SFA 616 162 R1025	11.00
	II	KPR3-103W	1SFA 616 162 R1035	11.00
Black	No text	KPR3-100B	1SFA 616 162 R1006	10.00
	RESET	KPR3-104B	1SFA 616 162 R1046	14
	RESET	KPR3-104BMR	(Reset w/metal shaft)	29.00
With extended button				
Red	No text	KPR4-100R	1SFA 616 163 R1001	13.10
	O	KPR4-105R	1SFA 616 163 R1051	
White	No text	KPR4-100W	1SFA 616 163 R1005	
Black	No text	KPR4-100B	1SFA 616 163 R1006	
	O	KPR4-105B	1SFA 616 163 R1056	

Accessories

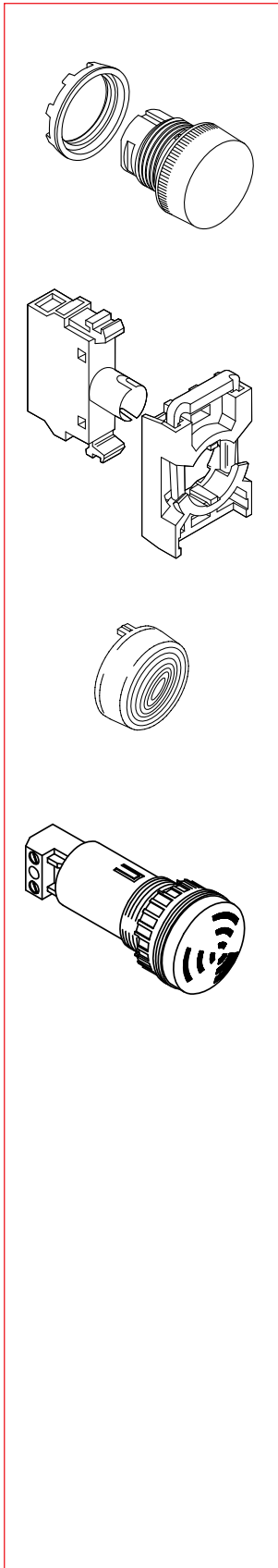
In applications with a long shaft, a flexible joint can be used to avoid damage to the shaft.

Description	Catalog No.	Ref. Code	List Price
180mm Shaft Including fixing nut	KA1-8046	1SFA 616 920 R8046	\$ 2.25
Spring joint	KA1-8047	1SFA 616 920 R8047	5.00
240mm Metal shaft Including fixing nut & foot	KA1-8046MR	—	12.00



Pilot lights and Buzzers

Pilot Devices
Modular Range
22mm



Pilot light head ①②

Lens color	Catalog No.	Ref. Code	List Price
Red	ML1-100R	1SFA 611 400 R1001	\$ 4.50
Green	ML1-100G	1SFA 611 400 R1002	
Yellow	ML1-100Y	1SFA 611 400 R1003	
Blue	ML1-100L	1SFA 611 400 R1004	
White	ML1-100W	1SFA 611 400 R1005	
Clear	ML1-100C	1SFA 611 400 R1008	

Lamp blocks with holder ①

Supply voltage	Catalog No.	Ref. Code	List Price
For max. 2 W, 230 V AC and DC filament bulb or LED $\frac{230\text{ V}, 2\text{ W}}{X1 \text{ } \otimes \text{ } X2}$ 115 V AC supply voltage. For 60 V filament bulb max. 1.2 W $\frac{115\text{ V}}{X1} \text{ } \text{---} \text{ } \frac{60\text{ V}}{1.2\text{ W } X2}$ 230 V AC supply voltage. For 130 V filament bulb max. 2 W $\frac{230\text{ V}}{X1} \text{ } \text{---} \text{ } \frac{130\text{ V}}{2\text{ W } X2}$	MCBH-001	1SFA 611 605 R1200	\$ 19.50
	MCBH-002	1SFA 611 605 R1300	23.50
	MCBH-003	1SFA 611 605 R1400	23.50

Light diffusing lens

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

Description	Catalog No.	Ref. Code	List Price
The lens is used instead of text cap	KA1-8005	1SFA 616 920 R8005	\$ 3.00

Buzzers

Black. Frequency: Approx. 2400 Hz. Loudness: Min 80 dB (A)/10 cm
Rated current: ≤ 8 mA. Service life: >5000 h

Supply voltage	Tone	Catalog No.	Catalog No.	Ref. Code	List Price
24 V AC/DC	Continuous	KB1-4010		1SFA 616 401 R4010	\$ 75.00
115 V AC/DC	Continuous	KB1-4030		1SFA 616 401 R4030	75.00
230 V AC	Continuous	KB1-4040		1SFA 616 401 R4040	75.00
24 V AC/DC	Pulsating	KB1-4110		1SFA 616 401 R4110	85.00
115 V AC/DC	Pulsating	KB1-4130		1SFA 616 401 R4130	85.00
230 V AC	Pulsating	KB1-4140		1SFA 616 401 R4140	85.00

① Bulb not included. See page 8.23
② For compact style, see page 8.33.

Potentiometers



Resistor data

Element Catalog No.	Cermet
Power rating	2 W
Mechanical angle	280°
Terminals	Solder lugs
Insulation voltage	900 V
Operating temperature	-1 – +70 °C

Complete potentiometers: screw-terminated

Black knob with integrated position indication and marking in white, no leads

Description	Catalog No.	Ref. Code	List Price
- with resistor 5 kohm			
Black plastic	MT-105B	1SFA 611 410 R1056	\$ 85.00
- with resistor 10 kohm			
Black plastic	MT-110B	1SFA 611 410 R1106	90.00

Speed potentiometers: Solder-tabs

Description	Catalog No.	Ref. Code	List Price
- with resistor 5 kohm			
Black plastic	KT-105B	1SFA 616 410 R1056	\$ 90.00
Metal	KT-305B	1SFA 616 410 R3056	95.00
- with resistor 10 kohm			
Black plastic	KT-110B	1SFA 616 410 R1106	90.00
Metal	KT-310B	1SFA 616 410 R3106	95.00

Operating knob – without resistor

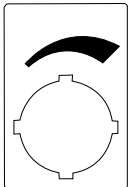
Black knob with integrated position indication and marking in white.

For shaft diameter 6 - 6.35 mm.
Min. shaft length 20 mm

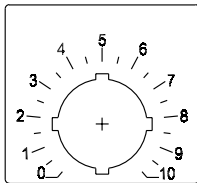
Description	Catalog No.	Ref. Code	List Price
Black plastic	KT-100B	1SFA 616 410 R1006	\$ 15.00
Metal	KT-300B	1SFA 616 410 R3006	20.00

Legend plates

Aluminum			
Description	Catalog No.	Ref. Code	List Price
Symbol - see figure	SK 615 562-87	SK 615 562-87	\$ 10
Scale: 0 - 10	SK 615 562-88	SK 615 562-88	



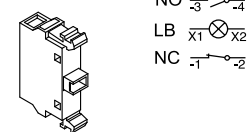
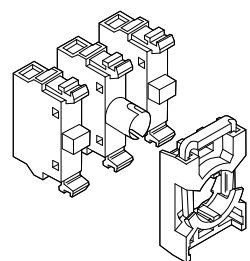
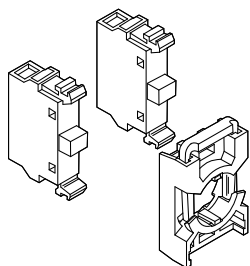
29.6 x 44.5 mm



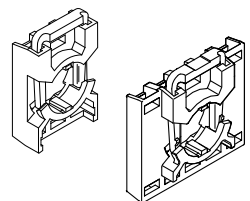
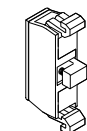
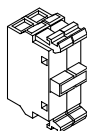
48.5 x 44.5 mm

Accessories

Pilot Devices
Modular Range
22mm



NO $\overline{3}$ \rightarrow $\overline{4}$
LB $\overline{X1}$ \otimes $\overline{X2}$
NC $\overline{1}$ \rightarrow $\overline{2}$



Contact block holders

Contact blocks and lamp blocks with holder for front mounting

Max. number of blocks in holder	Included blocks	Catalog No.	Ref. Code	List Price
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For non-illuminated operators

3	1 NC	MCBH-01	1SFA 611 605 R1110	\$ 10.00
3	1 NO	MCBH-10	1SFA 611 605 R1101	10.00
3	2 NC	MCBH-02	1SFA 611 605 R1120	18.00
3	2 NO	MCBH-20	1SFA 611 605 R1102	18.00
3	3 NC	MCBH-03	1SFA 611 605 R1130	26.00
3	3 NO	MCBH-30	1SFA 611 605 R1103	26.00
3	1 NO + 1 NC	MCBH-11	1SFA 611 605 R1111	18.00
3	1 NO + 2 NC	MCBH-12	1SFA 611 605 R1121	26.00
3	2 NO + 1 NC	MCBH-21	1SFA 611 605 R1112	26.00

For illuminated operators

3	1 LB	MCBH-001	—	19.50
3	1 NC + 1 LB	MCBH-011	1SFA 611 605 R1210	27.50
3	1 NO + 1 LB	MCBH-101	1SFA 611 605 R1201	27.50
3	1 NO + 1 NC + 1 LB	MCBH-111	1SFA 611 605 R1211	35.50
3	2 NC + 1 LB	MCBH-021	1SFA 611 605 R1220	35.50
3	2 NO + 1 LB	MCBH-201	1SFA 611 605 R1202	35.50

Single contact blocks for front mounting

Contacts	Catalog No.	Ref. Code	List Price
1 NO	MCB-10	1SFA 611 610 R1001	\$ 8.00
1 NC	MCB-01	1SFA 611 610 R1010	8.00
1 NO with gold plated contacts	MCB-10G	1SFA 611 610 R1101	16.00
1 NC with gold plated contacts	MCB-01G	1SFA 611 610 R1110	16.00

Double contact block for front mounting

To be used together with MCBH5-00 when contact blocks in position 4- and 5- are needed.
Also when using MCBH-00 together with selector switch and contact block in position 3- is needed

Included blocks	Catalog No.	Ref. Code	List Price
2 NO	MCB-20	1SFA 611 610 R1002	\$ 16.00
2 NC	MCB-02	1SFA 611 610 R1020	
1 NO + 1 NC	MCB-11	1SFA 611 610 R1011	

Micro contact blocks for front mounting

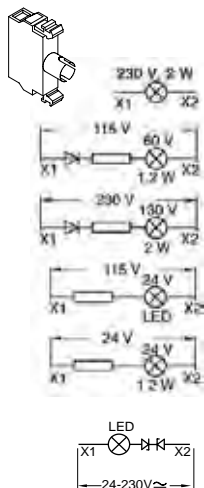
Contacts	Catalog No.	Ref. Code	List Price
1 NO	MCBL-10	1SFA611612R1010	\$ 12
1 NC	MCBL-01	1SFA611612R1001	

Holders

Description	Catalog No.	Ref. Code	List Price
Holders for front mounting			
For three blocks	MCBH-00	1SFA 611 605 R1100	\$ 2.00
For five blocks	MCBH5-00	1SFA 611 601 R1100	4.00

Accessories

8



Single lamp blocks for front mounting, Ba 9s base

Description	Catalog No.	Ref. Code	List Price
For max. 2 W, 230 V AC and DC filament bulb or LED	MLB-1	1SFA 611 620 R1001	\$ 17.50
115 V AC supply voltage for 60 V filament bulb max. 1.2 W.	MLB-2	1SFA 611 620 R1002	21.50
230 V AC supply voltage for 130 V filament bulb max. 2 W	MLB-3	1SFA 611 620 R1003	21.50
115 V AC and DC supply voltage For 24 V LED	MLB-4	1SFA 611 620 R1004	21.50
24 V AC and DC supply voltage with resistor. Intended for electronic circuits. The resistor limits the making current and protects against disturbances in the electronic circuit. For 24 V filament bulb	MLB-5	1SFA 611 620 R1005	21.50
With Zener diode, max 230V AC/DC, LEDs. Used in applications where voltage interference is a problem (i.e., the LED is visibly lit although control voltage is off.	MLB-8	1SFA 611 620 R1008	19.00

Transformer blocks

For 6 or 24 V filament bulb and 24 V LED. Rated power 1.5 W.

Primary voltage	Secondary voltage	Bulb Suffix LED Filament	Catalog No.	Ref. Code	List Price
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With lamp holder for pilot lights, front mounting, Ba 9s base

Intended to supply a 1.2 W filament bulb.

110 - 127 V AC	6 V AC	-	T1	KTR1-1001	1SFA 616 950 R1001	\$ 35.00
220 - 250 V AC	6 V AC	-	T2	KTR1-1002	1SFA 616 950 R1002	
380 - 420 V AC	6 V AC	-	T3	KTR1-1003	1SFA 616 950 R1003	
440 - 480 V AC	6 V AC	-	T4	KTR1-1004	1SFA 616 950 R1004	
500 - 600 V AC	6 V AC	-	T5	KTR1-1005	1SFA 616 950 R1005	
110 - 127 V AC	24 V AC ①	TL1	T6	KTR1-1011	1SFA 616 950 R1011	
220 - 250 V AC	24 V AC ①	TL2	T7	KTR1-1012	1SFA 616 950 R1012	
380 - 420 V AC	24 V AC ①	TL3	T8	KTR1-1013	1SFA 616 950 R1013	
440 - 480 V AC	24 V AC ①	TL4	T9	KTR1-1014	1SFA 616 950 R1014	

For illuminated operators ②

Intended to supply a 1.2 W filament bulb mounted in lamp block MLB-1 (1SFA 611 620 R1001) only.

110 - 127V AC	6 V AC	-	T1	KTR1-2001	1SFA 616 950 R2001	35.00
220 - 250 V AC	6 V AC	-	T2	KTR1-2002	1SFA 616 950 R2002	
380 - 420 V AC	6 V AC	-	T3	KTR1-2003	1SFA 616 950 R2003	
440 - 480 V AC	6 V AC	-	T4	KTR1-2004	1SFA 616 950 R2004	
500 - 600 V AC	6 V AC	-	T5	KTR1-2005	1SFA 616 950 R2005	
110 - 127 V AC	24 V AC ①	TL1	T6	KTR1-2011	1SFA 616 950 R2011	
220 - 250 V AC	24 V AC ①	TL2	T7	KTR1-2012	1SFA 616 950 R2012	
380 - 420 V AC	24 V AC ①	TL3	T8	KTR1-2013	1SFA 616 950 R2013	
440 - 480 V AC	24 V AC ①	TL4	T9	KTR1-2014	1SFA 616 950 R2014	

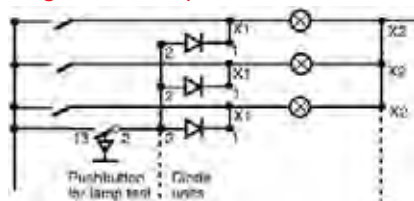
Diode blocks

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.

Description	Catalog No.	Ref. Code	List Price
Diode block	MDB-1001	1SFA 611 630 R1001	\$ 14.00

Diagram for lamp test with three diode block

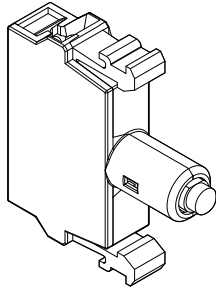


① Can be used with LED bulb

② To be used with directly supplied lamp blocks only.

Accessories

Pilot Devices
Modular Range
22mm



Front mounting integrated LED

Lamp block with integrated LED

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

Description	Catalog No.	Ref. Code	List Price	
12V DC rated voltage				
Red	MLBL-00R	1SFA611621R1001	\$ 25.50	
Green	MLBL-00G	1SFA611621R1002		
Yellow	MLBL-00Y	1SFA611621R1003		
Blue	MLBL-00L	1SFA611621R1004		
White	MLBL-00W	1SFA611621R1005		
24V AC/DC rated voltage				
Red	MLBL-01R	1SFA611621R1011		
Green	MLBL-01G	1SFA611621R1012		
Yellow	MLBL-01Y	1SFA611621R1013		
Blue	MLBL-01L	1SFA611621R1014		
White	MLBL-01W	1SFA611621R1015		
48V AC/DC rated voltage				
Red	MLBL-02R	1SFA611621R1021		
Green	MLBL-02G	1SFA611621R1022		
Yellow	MLBL-02Y	1SFA611621R1023		
Blue	MLBL-02L	1SFA611621R1024		
White	MLBL-02W	1SFA611621R1025		
110-130V AC rated voltage				
Red	MLBL-04R	1SFA611621R1041		
Green	MLBL-04G	1SFA611621R1042		
Yellow	MLBL-04Y	1SFA611621R1043		
Blue	MLBL-04L	1SFA611621R1044		
White	MLBL-04W	1SFA611621R1045		
110-130V DC rated voltage				
Red	MLBL-05R	1SFA611621R1051		
Green	MLBL-05G	1SFA611621R1052		
Yellow	MLBL-05Y	1SFA611621R1053		
Blue	MLBL-05L	1SFA611621R1054		
White	MLBL-05W	1SFA611621R1055		
220V DC rated voltage				
Red	MLBL-06R	1SFA611621R1061		
Green	MLBL-06G	1SFA611621R1062		
Yellow	MLBL-06Y	1SFA611621R1063		
Blue	MLBL-06L	1SFA611621R1064		
White	MLBL-06W	1SFA611621R1065		
230V DC rated voltage				
Red	MLBL-07R	1SFA611621R1071		
Green	MLBL-07G	1SFA611621R1072		
Yellow	MLBL-07Y	1SFA611621R1073		
Blue	MLBL-07L	1SFA611621R1074		
White	MLBL-07W	1SFA611621R1075		

Accessories



LEDs

With one diode chip mounted on a Ba 9s base. Choose the same color for the LED and the lamp cap or else use a clear lamp cap.

For white light use white LED with clear lamp cap. At DC the lamp base have to be connected to cathode (-) and the bottom contact to anode (+).

Description				Catalog No.	Ref. Code	List Price
Color	Rated current mA	Wave-length nm	Luminance mcd			
Rated voltage 12 V, DC Service life >50 000 h						
Red	15	630	250	KA2-2011	1SFA 616 921 R2011	\$ 21.00
Green	15	525	1000	KA2-2012	1SFA 616 921 R2012	
Yellow	15	592	250	KA2-2013	1SFA 616 921 R2013	
Blue	15	470	450	KA2-2014	1SFA 616 921 R2014	
White	15	x=0.31 y=0.32	600	KA2-2015	1SFA 616 921 R2015	
Rated voltage 24 V, (AC)/DC Service life >50 000 h						
Red	15	630	250	KA2-2021	1SFA 616 921 R2021	15.00
Green	15	525	800	KA2-2022	1SFA 616 921 R2022	
Yellow	15	592	250	KA2-2023	1SFA 616 921 R2023	
Blue	15	470	400	KA2-2024	1SFA 616 921 R2024	
White	15	x=0.31 y=0.32	500	KA2-2025	1SFA 616 921 R2025	
Rated voltage 36 V, (AC)/DC Service life >50 000 h						
Red	12	630	250	KA2-2031	1SFA 616 921 R2031	21.00
Green	12	525	800	KA2-2032	1SFA 616 921 R2032	
Yellow	12	592	250	KA2-2033	1SFA 616 921 R2033	
Blue	12	470	400	KA2-2034	1SFA 616 921 R2034	
White	12	x=0.31 y=0.32	500	KA2-2035	1SFA 616 921 R2035	
Rated voltage 48 V, (AC)/DC Service life >50 000 h						
Red	12	630	200	KA2-2041	1SFA 616 921 R2041	15.00
Green	12	525	1700	KA2-2042	1SFA 616 921 R2042	
Yellow	12	592	240	KA2-2043	1SFA 616 921 R2043	
Blue	12	470	720	KA2-2044	1SFA 616 921 R2044	
White	12	x=0.31 y=0.32	1200	KA2-2045	1SFA 616 921 R2045	
Rated voltage 60 V, (AC)/DC Service life >50 000 h						
Red	10	630	160	KA2-2051	1SFA 616 921 R2051	21.00
Green	10	525	1400	KA2-2052	1SFA 616 921 R2052	
Yellow	10	592	200	KA2-2053	1SFA 616 921 R2053	
Blue	10	470	600	KA2-2054	1SFA 616 921 R2054	
White	10	x=0.31 y=0.32	1000	KA2-2055	1SFA 616 921 R2055	
Rated voltage 110-130 V, AC Service life 25 000 h						
Red	4-6	630	60-100	KA2-2131	1SFA 616 921 R2131	15.00
Green	4-6	525	500-850	KA2-2132	1SFA 616 921 R2132	
Yellow	4-6	592	70-120	KA2-2133	1SFA 616 921 R2133	
Blue	4-6	470	220-350	KA2-2134	1SFA 616 921 R2134	
White	4-6	x=0.31 y=0.32	350-600	KA2-2135	1SFA 616 921 R2135	
Rated voltage 110-130 V, AC/DC Service life 25 000 h						
Red	4-6	630	60-100	KA2-2141	1SFA 616 921 R2141	21.00
Green	4-6	525	500-850	KA2-2142	1SFA 616 921 R2142	
Yellow	4-6	592	70-120	KA2-2143	1SFA 616 921 R2143	
Blue	4-6	470	220-350	KA2-2144	1SFA 616 921 R2144	
White	4-6	x=0.31 y=0.32	350-600	KA2-2145	1SFA 616 921 R2145	
Rated voltage 230 V, AC Service life 25 000 h						
Red	4	630	60	KA2-2221	1SFA 616 921 R2221	21.00
Green	4	525	500	KA2-2222	1SFA 616 921 R2222	
Yellow	4	592	70	KA2-2223	1SFA 616 921 R2223	
Blue	4	470	220	KA2-2224	1SFA 616 921 R2224	
White	4	x=0.31 y=0.32	350	KA2-2225	1SFA 616 921 R2225	
Rated voltage 230 V, AC/DC Service life 25 000 h						
Red	4	630	60	KA2-2231	1SFA 616 921 R2221	21.00
Green	4	525	500	KA2-2232	1SFA 616 921 R2222	
Yellow	4	592	70	KA2-2233	1SFA 616 921 R2223	
Blue	4	470	220	KA2-2234	1SFA 616 921 R2224	
White	4	x=0.31 y=0.32	350	KA2-2235	1SFA 616 921 R2225	

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

Accessories

Pilot Devices
Modular Range
22mm



Filament bulb

Filament bulbs

Ba 9s base Catalog No. of current: AC/DC. A lamp changing tool is required for changing bulb.

Description					Catalog No.	Ref. Code	List Price
Rated voltage V	Rated current mA	Rated output W	Service life h	Lumiance mcd			
6	200	1.2	10 000	350	5911 086-11	5911 086-11	\$ 6.00
12	100	1.2	10 000	230	5911 086-12	5911 086-12	
24	50	1.2	10 000	280	5911 086-13	5911 086-13	
30	40	1.2	10 000	250	5911 086-4	5911 086-4	
48	42	2	6 000	500	5911 086-5	5911 086-5	
60	20	1.2	5 000	190	5911 086-14	5911 086-14	
110	18	2	7 500	250	5911 086-7	5911 086-7	
130	15	2	7 500	120	5911 086-15	5911 086-15	



Flashing LED

Flashing LED

A lamp changing tool is required for changing bulb.

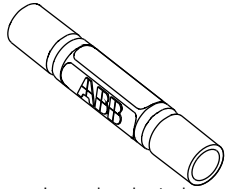
Choose the same color for the LED and the lamp cap or use a clear lamp cap.

The lamp base has to be connected to cathode (-) and the bottom contact to anode (+).

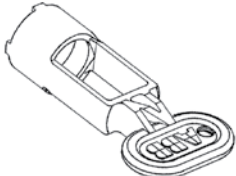
Description					Catalog No.	Ref. Code	List Price
Color	Wave length nm	Service life hours					
Red	630	50 000			4950 512-1	4950 512-1	\$ 20.00
Green	565	50 000			4950 512-2	4950 512-2	44.25
Yellow	585	50 000			4950 512-3	4950 512-3	20.00

**Rated voltage 24 V,
rated current 25 mA, DC**

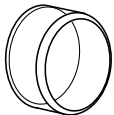
Accessories



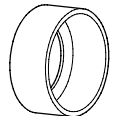
Lamp changing tool



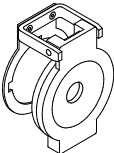
Mounting tool



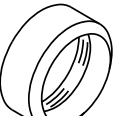
Silicone boot



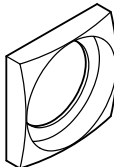
Protective ring



Protective cover



Bezel



Square bezel

Lamp changing tool

Description	Catalog No.	Ref. Code	List Price
For LEDs and for bulbs	KA1-8072	1SFA 616 920 R8072	\$ 10.00

Mounting tool

Description	Catalog No.	Ref. Code	List Price
Used for tightening the sleeve	KA1-8015	1SFA 611 920 R8015	\$ 10.00

Silicone boot

Of transparent, heat and cold resistant rubber. Does not harden at low temperature. Gives IP 67 degree of protection. When membrane is used, remove the gasket.

For operator with	Catalog No.	Ref. Code	List Price
Flush button	KA1-8052	1SFA 616 920 R8052	\$ 8.00
Extended button	KA1-8002	1SFA 616 920 R8002	
Double pushbutton	MA1-8126	—	

Emergency stop shroud

For 40 mm Emergency Stop Pushbuttons; *NOT for use with plastic enclosures.*

Color	Catalog No.	Ref. Code	List Price
To prevent inadvertant operation. Yellow	KA1-8053	1SFA 616 920 R8053	\$ 16.00

Protective ring

For flush and extended buttons

Description	Catalog No.	Ref. Code	List Price
To prevent inadvertant operation. Not together with legend plate holder.	SK 615 512-1	SK 615 512-1	\$ 4.00

Protective cover

For flush button.
To prevent inadvertant operation.
Not together with legend plate holder.

Description	Catalog No.	Ref. Code	List Price
For flush button. To prevent inadvertant operation. Not together with legend plate holder.	KA1-8010	1SFA 616 920 R8010	\$ 15.00

Bezel (Packing unit 10 pieces)

Description	Catalog No.	Ref. Code	List Price
For pushbutton			
Grey, plastic	KA1-8079	1SFA 616 920 R8079	\$ 1.00
Black, plastic	KA1-8022	1SFA 616 920 R8022	1.00
Metal	KA1-8021	1SFA 616 920 R8021	2.50
For selector switch			
Grey, plastic	KA1-8077	1SFA 616 920 R8077	1.00
Black, plastic	KA1-8080	1SFA 616 920 R8080	1.00
Metal	KA1-8024	1SFA 616 920 R8024	2.50

Square bezel

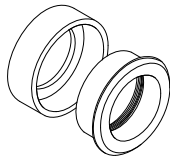
Black, plastic (Packing unit 10 pieces)	SK 616 016-2	SK 616 016-2	2.00
Grey, plastic (Packing unit 10 pieces)	KA1-8124	1SFA 611 920 R8124	

Accessories

Pilot Devices
Modular Range
22mm



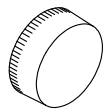
30mm adaptors



Flush-mount adaptors



Extra key



Pilot light lens



Flush buttons for pushbuttons



Extended buttons for pushbuttons

30 mm adaptors

For use when fitting the 22 mm pilot devices in 30 mm mounting holes. (1.5 – 4 mm panels)

Description	Catalog No.	Ref. Code	List Price
For use with emergency stop pushbuttons			
Black plastic	KA1-8027	1SFA 616 920 R8027	\$ 8.00
Metal	KA1-8028	1SFA 616 920 R8028	10.00
For use with pushbuttons, selector switches, pilot lights, potentiometers and buzzers			
Black plastic	KA1-8029	1SFA 616 920 R8029	8.00
Metal	KA1-8030	1SFA 616 920 R8030	10.00

Adaptors

Description	Catalog No.	Ref. Code	List Price
For flush mounted pushbuttons	KA1-8073	1SFA 616 920 R8073	\$ 15.00
For flush mounted selector switches	KA1-8074	1SFA 616 920 R8074	

Extra key (packing unit, 2 pcs)

Description	Catalog No.	Ref. Code	List Price
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	\$ 10.00
Ronis 3433-E (key code 73)	SK 616 021-73	SK 616 021-73	

Lenses for pilot lights (Packing unit 10 pieces)

Description/Color	Catalog No.	Ref. Code	List Price
Red	KA1-8031	1SFA 616 920 R8031	
Green	KA1-8032	1SFA 616 920 R8032	
Yellow	KA1-8033	1SFA 616 920 R8033	\$ 2.50
Blue	KA1-8034	1SFA 616 920 R8034	
White	KA1-8035	1SFA 616 920 R8035	
Clear	KA1-8038	1SFA 616 920 R8038	
Fresnel light diffusing lens ①	KA1-8005	1SFA 616 920 R8005	3.00

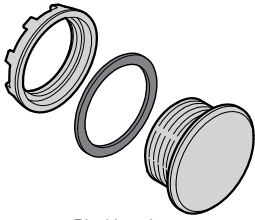
Buttons for pushbuttons (Packing unit 10 pieces)

Description	Color	Catalog No.	Ref. Code	List Price
Flush, opaque	Red	KA1-8081	1SFA 616 920 R8081	
	Green	KA1-8082	1SFA 616 920 R8082	
	Yellow	KA1-8083	1SFA 616 920 R8083	
	Blue	KA1-8084	1SFA 616 920 R8084	
	White	KA1-8085	1SFA 616 920 R8085	
	Black	KA1-8086	1SFA 616 920 R8086	
	Grey	KA1-8087	1SFA 616 920 R8087	
Extended, opaque	Red	KA1-8091	1SFA 616 920 R8091	
	Green	KA1-8092	1SFA 616 920 R8092	
	Yellow	KA1-8093	1SFA 616 920 R8093	
	Blue	KA1-8094	1SFA 616 920 R8094	
	White	KA1-8095	1SFA 616 920 R8095	
	Black	KA1-8096	1SFA 616 920 R8096	
	Grey	KA1-8097	1SFA 616 920 R8097	\$ 1.50
Flush, transparent	Red	KA1-8101	1SFA 616 920 R8101	
	Green	KA1-8102	1SFA 616 920 R8102	
	Yellow	KA1-8103	1SFA 616 920 R8103	
	Blue	KA1-8104	1SFA 616 920 R8104	
	White	KA1-8105	1SFA 616 920 R8105	
	Clear	KA1-8108	1SFA 616 920 R8108	
	Extended, transparent	Red	KA1-8111	1SFA 616 920 R8111
Green		KA1-8112	1SFA 616 920 R8112	
Yellow		KA1-8113	1SFA 616 920 R8113	
Blue		KA1-8114	1SFA 616 920 R8114	
White		KA1-8115	1SFA 616 920 R8115	
Clear		KA1-8118	1SFA 616 920 R8118	

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

8

Accessories



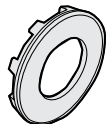
Blanking plug



Gasket



Locking nut, 22mm



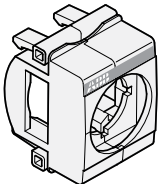
Locking nut, 30mm



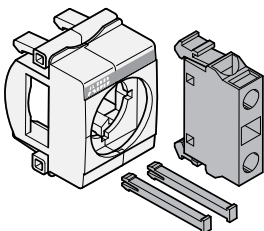
Selector switch lock



Selector switch guard



DIN rail adaptor



DIN Rail adaptor with accessories

Blanking plug (22mm)

Description	Catalog No.	Reference Code	List Price
Grey plastic	MA1-8129	1SFA 611 920 R8129	\$ 5.80
Black plastic	MA1-8130	1SFA 611 920 R8130	5.80

Blanking plug (30mm)

Description	Catalog No.	Reference Code	List Price
Black plastic	MA1-8133	1SFA 611 920 R8133	7.30

Spare gasket, 22mm

Description	Catalog No.	List Price
Gasket, 22mm	2152 0357-1	\$ 1.00

Locking nut – for mounting 22mm pilot devices

Description	Catalog No.	List Price	
Grey plastic, 22mm	MA1-8019	1SFA 611 920 R8019	\$ 2.00

Locking nut – for mounting 30mm adaptor with 22mm device

Description	Catalog No.	List Price	
Grey plastic, 30mm	MA1-8134	1SFA 611 920 R8134	\$ 2.50

Selector switch lock

Description	Catalog No.	List Price
Selector switch lock	CBK-XSWL	\$ 35.00

Selector switch guard

Description	Catalog No.	List Price
Selector switch guard	CBK-XSWG	\$ 8.00

DIN rail adaptor

For 35mm DIN rail. To be used with rear-mounting contact blocks. Accessories kit includes 1 dummy block and 2 connector pins. Must be used when DIN-rail mounting pilot devices with only 1 contact block.

Description	Catalog No.	Reference Code	List Price
DIN rail adaptor	MA1-8131	1SFA611920R8131	\$ 18.00
DIN rail adaptor, with accessories	MA1-8001	1SFA611920R8001	20.00
Extra dummy block, rear mount	MDB-2	1SFA611630R1002	4.00
Extra pin set	MXP3	1SFA616920R8007	3.50



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

Standards

IEC 60947-1	Low-voltage switchgear and controlgear - Part 1: General rules
IEC 60947-5-1	Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices
IEC 60947-5-5	Low-voltage switchgear and controlgear - Part 5-5: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function
IEC 60073	Basic and safety principles for man-machine interface, marking and identification - Coding principles for indicators and actuators
IEC 60529	Degrees of protection provided by enclosures (IP Code)
EN418	Actuators for mechanical emergency stops
EN 60947-1	Low-voltage switchgear and controlgear - Part 1: General rules
EN 60947-5-1	Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices
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
EN 60073	Basic and safety principles for man-machine interface, marking and identification - Coding principles for indication devices and actuators
EN 60529	Degrees of protection provided by enclosures (IP Code)
EN 50013	Low-voltage switchgear and controlgear for industrial use - Terminal marking and distinctive number for particular control switches
UL 508	Industrial Control Equipment
CSA C22.2 No 14	Industrial Control Equipment

Degrees of protection – UV protection according to UL 746 (C)

Item	IP	UL/CSA
Operators		
Pushbutton with flush or extended button, MP	IP 66	Type 1, 3R, 4, 4X, 12, 13
Double pushbutton, MPD	IP 66	Type 1, 3R, 4, 4X, 12, 13
Mushroom pushbutton, momentary, MPM	IP 66	Type 1, 3R, 4, 4X, 12, 13
Emergency stop pushbutton, MPMT/P	IP 66	Type 1, 3R, 4, 4X, 12, 13
Selector switch, M2SS/M3SS	IP 66	Type 1, 3R, 4, 4X, 12, 13
Key operated selector switch, M2SSK/M3SSK	IP 66	Type 1, 3R, 4, 4X, 12
Toggle switch, MTS2/MTS3	IP 66	Type 1, 3R, 4, 4X, 12, 13
Definite purpose pushbutton, 30 mm, KP6	IP 66	Type 1, 3R, 4, 4X
Reset button, KPR	IP 66	Type 1, 3R, 4, 4X, 12, 13
Pilot lights, ML	IP 66	Type 1, 3R, 4, 4X, 12, 13
Buzzer, KB	IP 65	Type 4X
Potentiometer, KT	IP 66	Type 1, 3R, 4, 4X, 12, 13
Accessories, MA1	IP 66	Type 1, 3R, 4, 4X, 12, 13
Contact block & transformer block	IP 20	Type 1, 3R, 4, 4X, 12, 13
Enclosures		
Plastic enclosures	IP 66	Type 1, 3R, 4, 4X, 12, 13
Metallic enclosures	IP 67	Type 1, 3R, 4, 4X, 12, 13



Material

No ozone depleting substances in the products.

All front parts are made of polycarbonate

Material		
PC	Polycarbonate	High impact strength, good outdoor resistance. Can withstand light acid solutions, aliphatic hydrocarbons, paraffin, alcohols, animal and vegetable greases.
PSU	Polysulphone	Can withstand high temperatures, acids, basic solutions, alkaline compounds, oils, alcohols.
PA	Polyamide	Can withstand high temperatures, aliphatic, aromatic and chlorinated hydrocarbons, esters, ketone-aldehydes, alcohols and basic solutions.
PBT		Can withstand 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.
Rubber		Chloroprene Nitrile

Mechanical life

Operators

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

Temperature

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

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Terminals

Plus-minus Pozidriv No.2 screw with DIN-washer.	
Connectable area	min. 1 x 0.5 mm ² /AWG 20 max. 2 x 2.5 mm ² /2 x AWG14
Recommended torque	0.9 Nm

Tightening torque

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

Contact blocks

Mechanical endurance 10 million operations

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

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

Ratings as per IEC 60 947-5-1

Rated insulation voltage, U_i	690 V
Rated thermal current, I_{th}	10 A
Rated operational current, I_e	
utilisation category AC 15,	at 120 V 8 A
	230 V 6 A
	400 V 4 A
	690 V 2 A

Rated operational current, I_e	
utilisation category DC 13,	at 24 V 5 A
	125 V 1.1 A
	250 V 0.55 A
	< 25 mΩ

Contact resistance

Compulsory function test at 5V, 16 mA

Max. number of contact blocks per operator ①

Pushbutton, toggle switch and mushroom pushbutton	6
Maintained pushbutton	4
Double pushbutton, selector switch, key operated selector switch and emergency stop pushbutton	4
Short circuit protection	
Max. fuse at 1 kA	16 A ordinary 10 A delayed

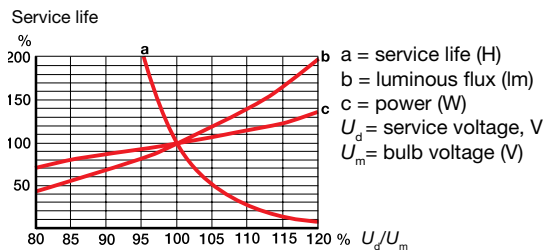
Lamp block

Ratings as per IEC 60 947-5-1

Rated insulation voltage	230 V
Base	Ba 9s
Permissible power, up to	2 W

Service life of filament bulb

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



Lamp comparison

Bulb Catalog No.	Approx. life (hours)	Shock and service immunity	High vibration temperature	Low power operating	Brightness consumption
Filament	5000 - 10 000	+	+	+	+++
LED	25 000 - 50 000	+++	++	++	++

Very good +++
Good ++
Less good +

Contact blocks, cont.

Gold contacts

Ratings per UL508: 5 V, 12 mA
12 V, 1 mA

Micro block

Ratings per UL508: 125 VAC, 3 A
60 VDC, 2 A
48 VDC, 1 A

Minimum switching capacity:
3 VDC, 1 mA

Transformer block

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

Rated power	1.5 W
Rated voltage	Ratio, see Accessories page 8.25
Rated insulation voltage acc. to IEC 70 °C (DT)	Class E

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



Modular range
30mm



8

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

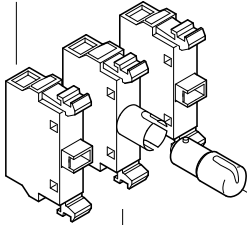
- Full voltage, resistor and transformer
- LED and filament bulbs available

General information Mounting

Exploded view

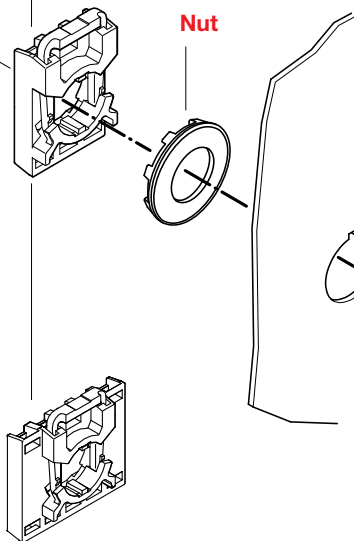
Contact block

Single pole with making or breaking contact



Holder

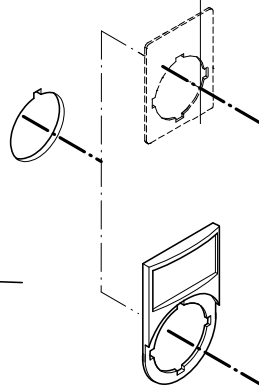
Available either for three or five blocks in one single row. Additional blocks can be stacked on holders for three blocks.



Nut

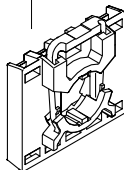
Legend plates

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



Lamp block

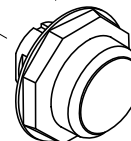
Illuminated pushbuttons, illuminated selector switches and pilot lights have a lamp block in the center position of the holder.



Five block holder

Operator

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

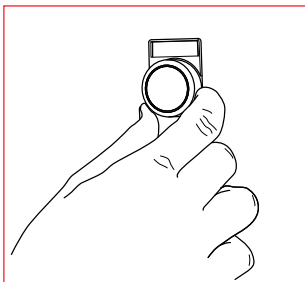


Bezels

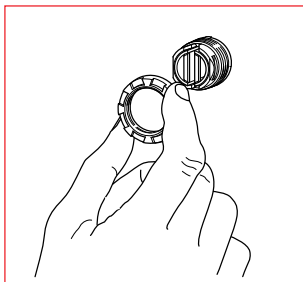
Pushbuttons, selector switches and toggle switches with bezel in black plastic, chrome metal are available.

8

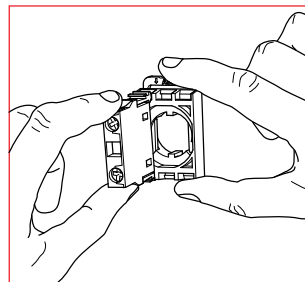
Easy to mount



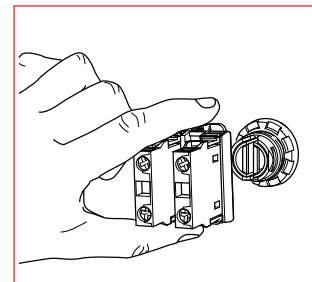
The operator is to be inserted from the front.....



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

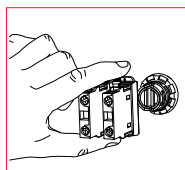
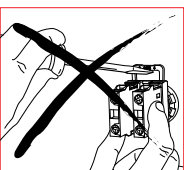


The contact blocks/lamp block are then snapped on to the holder...



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

...and to remove

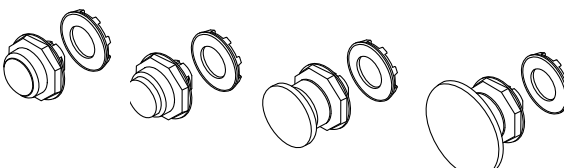


Press down the spring on the holder and pull the holder from the actuator.

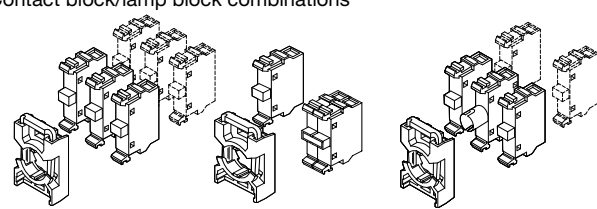
Selection guide

Pilot Devices
Modular Range
30mm

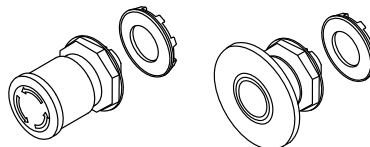
Pushbuttons and Mushroom pushbuttons



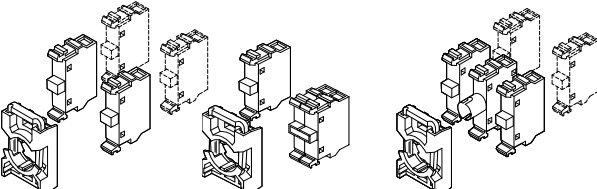
Contact block/lamp block combinations



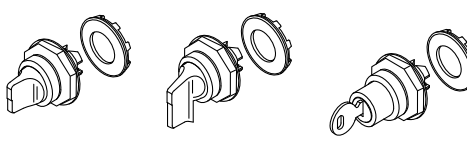
Emergency stop pushbuttons



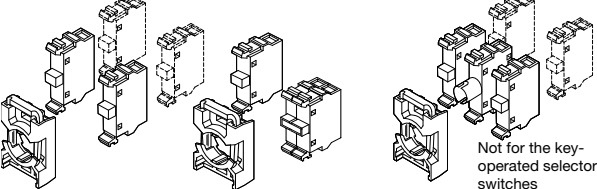
Contact block/lamp block combinations



Selector switches

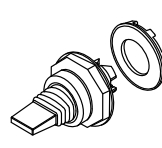


Contact block/lamp block combinations

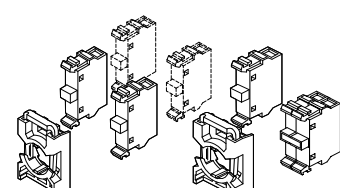


Not for the key-operated selector switches

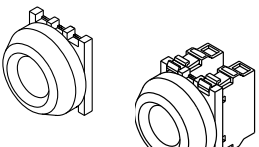
Toggle switches




Contact block combinations



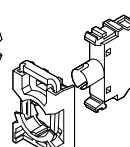
Definite purpose push-buttons



Pilot lights



Lamp block combination

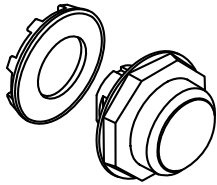


Flush and extended pushbuttons

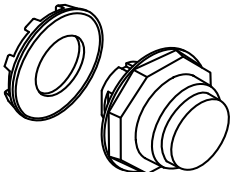
Non-illuminated and illuminated

Momentary and maintained

8



Flush



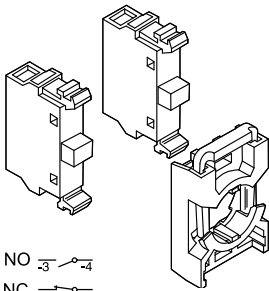
Extended

Δ Non-illuminated
button color

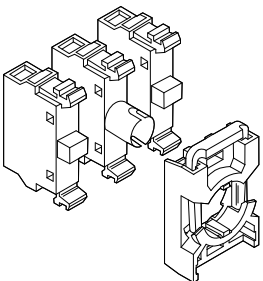
R Red
G Green
Y Yellow
L Blue
W White
B Black
C Clear

‡ Illuminated
button color

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



NO $\overline{1}$ $\overline{2}$ $\overline{3}$ $\overline{4}$
NC $\overline{1}$ $\overline{2}$



Non-illuminated

Description	Catalog number	List price
Black plastic bezel		
Flush, momentary	G1MP1-10Δ	\$ 14.10
Flush, maintained	G1MP2-10Δ	25.30
Extended, momentary	G1MP3-10Δ	14.10
Extended, maintained	G1MP4-10Δ	25.30
Chrome bezel		
Flush, momentary	G2MP1-30Δ	16.00
Flush, maintained	G2MP2-30Δ	27.30
Extended, momentary	G2MP3-30Δ	16.10
Extended, maintained	G2MP4-30Δ	27.30

Illuminated^①

Description	Catalog number	List price
Black plastic bezel		
Flush, momentary	G1MP1-11‡	\$ 14.10
Flush, maintained	G1MP2-11‡	25.30
Extended, momentary	G1MP3-11‡	14.10
Extended, maintained	G1MP4-11‡	25.30
Chrome bezel		
Flush, momentary	G2MP1-31‡	16.10
Flush, maintained	G2MP2-31‡	27.30
Extended, momentary	G2MP3-31‡	16.10
Extended, maintained	G2MP4-31‡	27.30

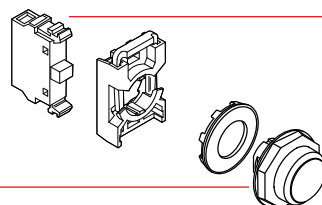
Contact blocks, lamp block and holder^②

Blocks	Catalog number	Ref. code	List price
1 NO with holder	MCBH-10	1SFA 611 605 R1101	\$ 10.00
1 NC with holder	MCBH-01	1SFA 611 605 R1110	10.00
2 NO with holder	MCBH-20	1SFA 611 605 R1102	18.00
2 NC with holder	MCBH-02	1SFA 611 605 R1120	18.00
1 NO + 1 NC with holder	MCBH-11	1SFA 611 605 R1111	18.00
1 NO + 1 LB with holder	MCBH-101	1SFA 611 605 R1201	27.50
1 NC + 1 LB with holder	MCBH-011	1SFA 611 605 R1210	27.50
2 NO + 1 LB with holder ^①	MCBH-201	1SFA 611 605 R1202	35.50
2 NC + 1 LB with holder	MCBH-021	1SFA 611 605 R1220	35.50
1 NO + 1 NC + 1 LB with holder	MCBH-111	1SFA 611 605 R1211	35.50
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Lamp block for 2 W, max 230 V AC/DC bulb or LED	MLB-1	1SFA 611 620 R1001	17.50
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00

Ordering example

Requested: A modular pushbutton, momentary,
with red flush button and one NO contact.

Ref.: 1 piece of G1MP1- 40R +1 piece of MCBH-10



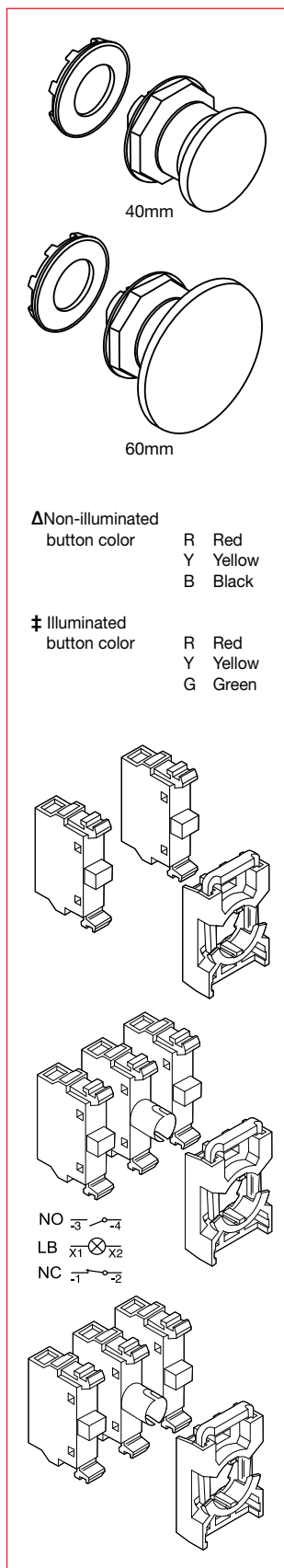
① No contact block in the center position.

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



Non-illuminated

Description	Catalog number	List price
Black plastic bezel		
40mm	G1MPM1-10Δ	\$ 24
60mm	G1MPM2-10Δ	28
Chrome bezel		
40mm	G2MPM1-30Δ	26
60mm	G2MPM2-30Δ	30

Illuminated[Ⓢ]

Description	Catalog number	List price
Black plastic bezel		
40mm	G1MPM1-11‡	\$ 24
60mm	G1MPM2-11‡	28
Chrome bezel		
40mm	G2MPM1-31‡	26
60mm	G2MPM2-31‡	30

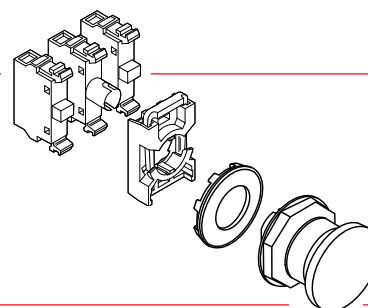
Contact blocks, lamp block and holder[Ⓢ]

Blocks	Catalog number	Ref. code	List price
1 NO with holder	MCBH-10	1SFA 611 605 R1101	\$ 10.00
1 NC with holder	MCBH-01	1SFA 611 605 R1110	10.00
2 NO with holder	MCBH-20	1SFA 611 605 R1102	18.00
2 NC with holder	MCBH-02	1SFA 611 605 R1120	18.00
1 NO + 1 NC with holder	MCBH-11	1SFA 611 605 R1111	18.00
1 NO + 1 LB with holder	MCBH-101	1SFA 611 605 R1201	27.50
1 NC + 1 LB with holder	MCBH-011	1SFA 611 605 R1210	27.50
2 NO + 1 LB with holder ^①	MCBH-201	1SFA 611 605 R1202	35.50
2 NC + 1 LB with holder	MCBH-021	1SFA 611 605 R1220	35.50
1 NO + 1 NC + 1 LB with holder	MCBH-111	1SFA 611 605 R1211	35.50
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Lamp block for 2 W, max 230 V AC/DC bulb or LED	MLB-1	1SFA 611 620 R1001	17.50
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00

Ordering example – Mushroom Pushbutton

Requested: A modular mushroom pushbutton, Ø 40 mm, illuminated, red, with one NO + one NC contact and a standard lamp block

Ref.: 1 piece of G1MPM1-41B + 1 piece of MCBH-111
Bulb - see accessories



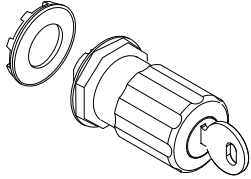
- ① No contact block in the center position
② Lamp block MLB-1. Bulb not included. Other lamp block see Accessories, bulb max 1.2 W.

Emergency stop pushbuttons

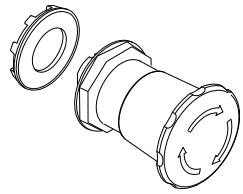
Non-illuminated

30mm & 40mm head

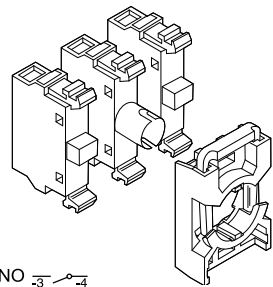
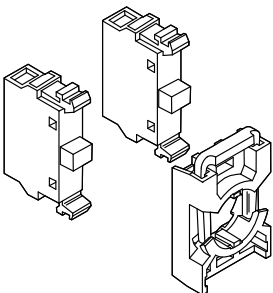
Fulfills IEC 60947-5-5



30mm



40mm



Operator

Operator function	Button color and material	Catalog No.	List Price
ø 30mm			
black bezel, non-illuminated			
Twist release	Red, plastic	G1MPET3-10R	\$ 34.00
Pull release	Red, plastic	G1MPEP3-10R	34.00
Key release			
(Key code 71, Ronis 455)	Red, plastic	G1MPEK3-11R	48.00
(Key code 72, Ronis 421)	Red, plastic	G1MPEK3-12R	48.00
(Key code 73, Ronis 3433-E)	Red, plastic	G1MPEK3-13R	48.00
chrome bezel, non-illuminated			
Twist release	Red, plastic	G2MPET3-10R	36.00
Pull release	Red, plastic	G2MPEP3-10R	36.00
Key release			
(Key code 71, Ronis 455)	Red, plastic	G2MPEK3-11R	50.00
(Key code 72, Ronis 421)	Red, plastic	G2MPEK3-12R	50.00
(Key code 73, Ronis 3433-E)	Red, plastic	G2MPEK3-13R	50.00
ø 40mm			
black bezel, non-illuminated			
Twist release	Red, plastic	G1MPET4-10R	38.00
Pull release	Red, plastic	G1MPEP4-10R	38.00
Key release			
(Key code 71, Ronis 455)	Red, plastic	G1MPEK4-11R	56.00
(Key code 72, Ronis 421)	Red, plastic	G1MPEK4-12R	56.00
(Key code 73, Ronis 3433-E)	Red, plastic	G1MPEK4-13R	56.00
chrome bezel, non-illuminated			
Twist release	Red, plastic	G2MPET4-10R	40.00
Pull release	Red, plastic	G2MPEP4-10R	40.00
Key release			
(Key code 71, Ronis 455)	Red, plastic	G2MPEK4-11R	58.00
(Key code 72, Ronis 421)	Red, plastic	G2MPEK4-12R	58.00
(Key code 73, Ronis 3433-E)	Red, plastic	G2MPEK4-13R	58.00

Contact blocks, lamp block and holder [®]

Blocks	Catalog number	Ref. code	List price
1 NO with holder	MCBH-10	1SFA 611 605 R1101	\$ 10.00
1 NC with holder	MCBH-01	1SFA 611 605 R1110	10.00
2 NO with holder	MCBH-20	1SFA 611 605 R1102	18.00
2 NC with holder	MCBH-02	1SFA 611 605 R1120	18.00
1 NO + 1 NC with holder	MCBH-11	1SFA 611 605 R1111	18.00
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00

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

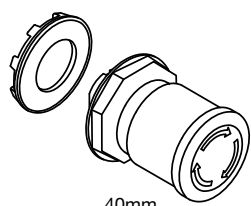
Durability test	6,050 cycles. This is not a test of mechanical life. The product has a mechanical life of 100,000 operations.	Latching test	Impulse voltage test at 2,500 V
Robustness	The force 113 N applied in three axes	Resetting test	Pulling force < 50 N Turning torque < 1 Nm
Conditioning	Heat and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

Emergency stop pushbuttons

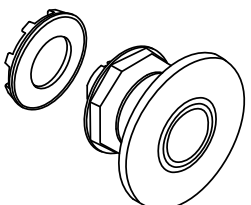
Non-illuminated and illuminated

40mm & 60mm head

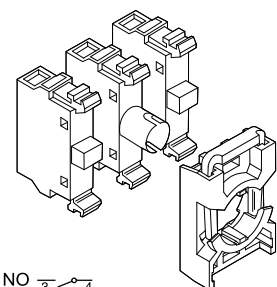
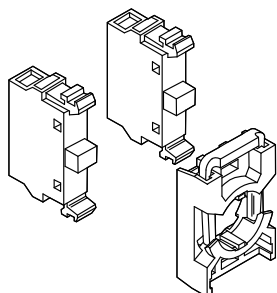
Fulfills IEC 60947-5-5






40mm



60mm



NO 
LB 
NC 

Non-illuminated, red

Description	Catalog number	List price
Black plastic bezel		
40mm, twist release	G1MPMT3-10R	\$ 42.00
40mm, pull release	G1MPMP3-10R	42.00
60mm, twist release	G1MPMT4-10R	54.00
60mm, pull release	G1MPMP4-10R	54.00
Chrome bezel		
40mm, twist release	G2MPMT3-10R	44.00
40mm, pull release	G2MPMP3-10R	44.00
60mm, twist release	G2MPMT4-10R	56.00
60mm, pull release	G2MPMP4-10R	56.00

Illuminated, red^①

Description	Catalog number	List price
Black plastic bezel		
40mm, twist release	G1MPMT3-11R	\$ 42.00
40mm, pull release	G1MPMP3-11R	42.00
60mm, twist release	G1MPMT4-11R	54.00
60mm, pull release	G1MPMP4-11R	54.00
Chrome bezel		
40mm, twist release	G2MPMT3-11R	44.00
40mm, pull release	G2MPMP3-11R	44.00
60mm, twist release	G2MPMT4-11R	56.00
60mm, pull release	G2MPMP4-11R	56.00

Contact blocks, lamp block and holder^②

Blocks	Catalog number	Ref. code	List price
1 NO with holder	MCBH-10	1SFA 611 605 R1101	\$ 10.00
1 NC with holder	MCBH-01	1SFA 611 605 R1110	10.00
2 NO with holder	MCBH-20	1SFA 611 605 R1102	18.00
2 NC with holder	MCBH-02	1SFA 611 605 R1120	18.00
1 NO + 1 NC with holder	MCBH-11	1SFA 611 605 R1111	18.00
1 NO + 1 LB with holder	MCBH-101	1SFA 611 605 R1201	27.50
1 NC + 1 LB with holder	MCBH-011	1SFA 611 605 R1210	27.50
2 NO + 1 LB with holder	MCBH-201	1SFA 611 605 R1202	35.50
2 NC + 1 LB with holder	MCBH-021	1SFA 611 605 R1220	35.50
1 NO + 1 NC + 1 LB with holder	MCBH-111	1SFA 611 605 R1211	35.50
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Lamp block for 2 W, max 230 V AC/DC bulb or LED	MLB-1	1SFA 611 620 R1001	17.50
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00

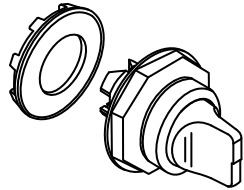
To comply with the standard, IEC 60947-5-5, a number of tests have to be conducted:

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

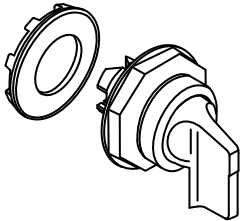
① No contact in the center position

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

2 Position selector switches Non-illuminated



Short handle



Long handle

Δ Switch color R Red
 B Black
 U Grey

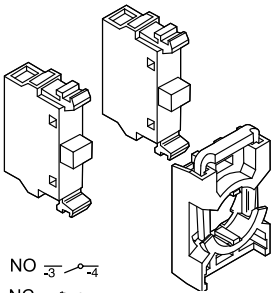
Maintained



Maintained



Momentary,
spring return
from C to B



NO
NC

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)

Non-illuminated

Description	Catalog number	List price
Short handle		
Black plastic bezel		
Maintained B & C	G1M2SS1-10Δ	\$ 19
Maintained A & C	G1M2SS2-10Δ	19
Spring return from C to B	G1M2SS3-10Δ	22
Chrome bezel		
Maintained B & C	G2M2SS1-30Δ	21
Maintained A & C	G2M2SS2-30Δ	21
Spring return from C to B	G2M2SS3-30Δ	24
Long handle		
Black plastic bezel		
Maintained B & C	G1M2SS4-10Δ	19
Maintained A & C	G1M2SS5-10Δ	19
Spring return from C to B	G1M2SS6-10Δ	22
Chrome bezel		
Maintained B & C	G2M2SS4-30Δ	21
Maintained A & C	G2M2SS5-30Δ	21
Spring return from C to B	G2M2SS6-30Δ	24

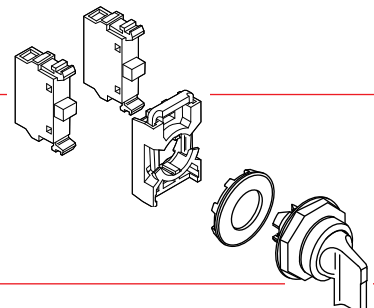
Contact blocks and holder

Blocks	Catalog number	Ref. code	List price
1 NO with holder	MCBH-10	1SFA 611 605 R1101	\$ 10.00
1 NC with holder	MCBH-01	1SFA 611 605 R1110	10.00
2 NO with holder	MCBH-20	1SFA 611 605 R1102	18.00
2 NC with holder	MCBH-02	1SFA 611 605 R1120	18.00
1 NO + 1 NC with holder	MCBH-11	1SFA 611 605 R1111	18.00
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00

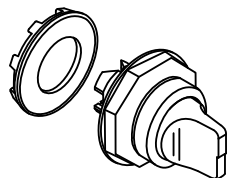
Ordering example

Requested: A non-illuminated modular selector switch. Black.
Maintained.
Handle positions: A and C
With 2 NC contacts

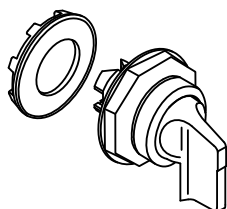
Ref.: 1 piece of G1M2SS2-40B + 1 piece of MCBH-02



2 Position selector switches Illuminated

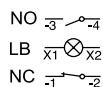
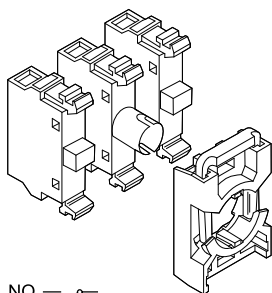
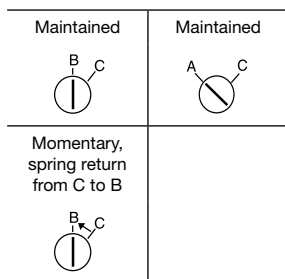


Short handle



Long handle

Δ Switch color	R	Red
	G	Green
	Y	Yellow
	L	Blue
	C	Clear



Illuminated^①

Description	Catalog number	List price
Short handle		
Black plastic bezel		
Maintained B & C	G1M2SS1-11Δ	\$ 25
Maintained A & C	G1M2SS2-11Δ	25
Spring return from C to B	G1M2SS3-11Δ	34
Chrome bezel		
Maintained B & C	G2M2SS1-31Δ	27
Maintained A & C	G2M2SS2-31Δ	27
Spring return from C to B	G2M2SS3-31Δ	36
Long handle		
Black plastic bezel		
Maintained B & C	G1M2SS4-11Δ	25
Maintained A & C	G1M2SS5-11Δ	25
Spring return from C to B	G1M2SS6-11Δ	34
Chrome bezel		
Maintained B & C	G2M2SS4-31Δ	27
Maintained A & C	G2M2SS5-31Δ	27
Spring return from C to B	G2M2SS6-31Δ	36

Contact blocks, lamp block and holder^②

Blocks	Catalog number	Ref. code	List price
1 NO + 1 LB with holder	MCBH-101	1SFA 611 605 R1201	\$ 27.50
1 NC + 1 LB with holder	MCBH-011	1SFA 611 605 R1210	27.50
2 NO + 1 LB with holder	MCBH-201	1SFA 611 605 R1202	35.50
2 NC + 1 LB with holder	MCBH-021	1SFA 611 605 R1220	35.50
1 NO + 1 NC with holder	MCBH-111	1SFA 611 605 R1211	35.50
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Lamp block for 2 W, max 230 V AC/DC bulb or LED	MLB-1	1SFA 611 620 R1001	17.50
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00

Contact functions See page 8.38

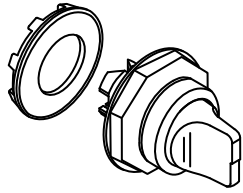
Ordering example See page 8.38

① No contact block in the center position

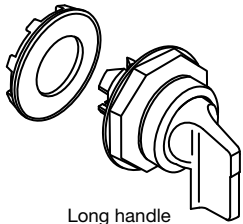
② Lamp block MLB-1. Bulb not included. Other lamp block see Accessories, bulb max 1.2 W.

3 Position selector switches Non-illuminated

8



Short handle



Long handle

Δ Switch color	R	Red
	B	Black
	U	Grey

Maintained



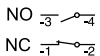
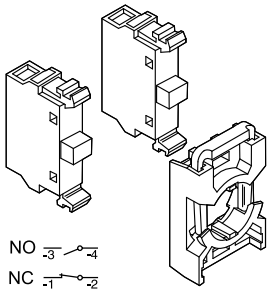
Momentary, spring return from A to B and from C to B



Momentary, spring return from C to B



Momentary, spring return from A to B



Contact functions

Block positions as seen from operator front.

Handle position	Left block	Right block
A	x	O
B	O	O
C	O	x

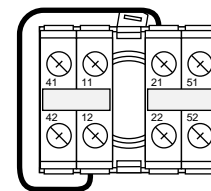
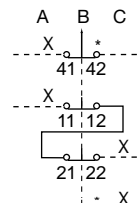
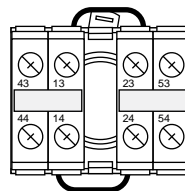
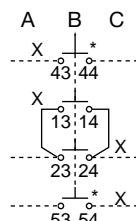
Non-illuminated

Description	Catalog number	List price
Short handle		
Black plastic bezel		
Maintained A, B & C	G1M3SS1-10Δ	\$ 19
Spring return A & C to B	G1M3SS2-10Δ	22
Maint A, Spring ret C to B	G1M3SS3-10Δ	22
Maint C, Spring ret A to B	G1M3SS7-10Δ	22
Chrome bezel		
Maintained A, B & C	G2M3SS1-30Δ	21
Spring return A & C to B	G2M3SS2-30Δ	24
Maint A, Spring ret C to B	G2M3SS3-30Δ	24
Maint C, Spring ret A to B	G2M3SS7-30Δ	24
Long handle		
Black plastic bezel		
Maintained A, B & C	G1M3SS4-10Δ	19
Spring return A & C to B	G1M3SS5-10Δ	22
Maint A, Spring ret C to B	G1M3SS6-10Δ	22
Maint C, Spring ret A to B	G1M3SS8-10Δ	22
Chrome bezel		
Maintained A, B & C	G2M3SS4-30Δ	21
Spring return A & C to B	G2M3SS5-30Δ	24
Maint A, Spring ret C to B	G2M3SS6-30Δ	24
Maint C, Spring ret A to B	G2M3SS8-30Δ	24

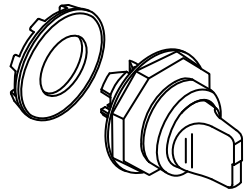
Contact blocks and holder

Blocks	Catalog number	Ref. code	List price
1 NO with holder	MCBH-10	1SFA 611 605 R1101	\$ 10.00
1 NC with holder	MCBH-01	1SFA 611 605 R1110	10.00
2 NO with holder	MCBH-20	1SFA 611 605 R1102	18.00
2 NC with holder	MCBH-02	1SFA 611 605 R1120	18.00
1 NO + 1 NC with holder	MCBH-11	1SFA 611 605 R1111	18.00
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00

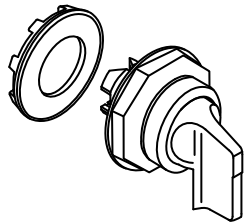
Center position connection detail



3 Position selector switches Illuminated



Short handle



Long handle

Δ Switch color	R	Red
	G	Green
	Y	Yellow
	L	Blue
	C	Clear

Maintained



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



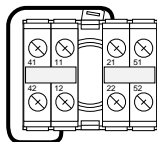
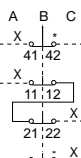
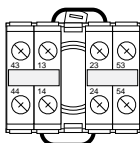
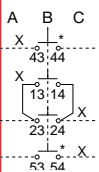
Momentary,
spring return
from C to B



Momentary,
spring return
from A to B



Center position connection detail



Illuminated^①

Description

Short handle

Black plastic bezel

Maintained A, B & C
Spring return A & C to B
Maint A, Spring ret C to B
Maint C, Spring ret A to B

Catalog number

List price

G1M3SS1-11Δ	\$ 25
G1M3SS2-11Δ	34
G1M3SS3-11Δ	34
G1M3SS7-11Δ	34

Chrome bezel

Maintained A, B & C
Spring return A & C to B
Maint A, Spring ret C to B
Maint C, Spring ret A to B

G2M3SS1-31Δ	27
G2M3SS2-31Δ	36
G2M3SS3-31Δ	36
G2M3SS7-31Δ	36

Long handle

Black plastic bezel

Maintained A, B & C
Spring return A & C to B
Maint A, Spring ret C to B
Maint C, Spring ret A to B

G1M3SS4-11Δ	25
G1M3SS5-11Δ	34
G1M3SS6-11Δ	34
G1M3SS8-11Δ	34

Chrome bezel

Maintained A, B & C
Spring return A & C to B
Maint A, Spring ret C to B
Maint C, Spring ret A to B

G2M3SS4-31Δ	27
G2M3SS5-31Δ	36
G2M3SS6-31Δ	36
G2M3SS8-31Δ	36

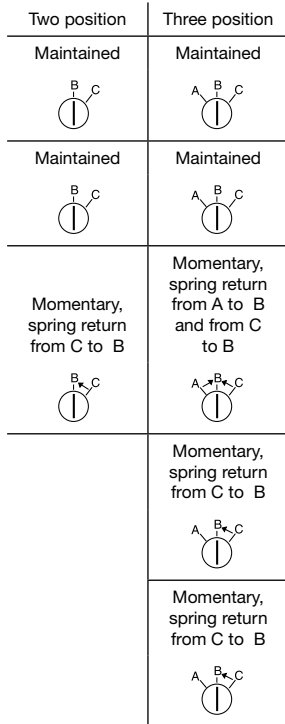
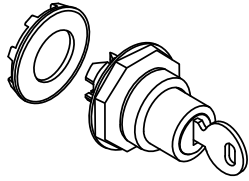
Contact blocks, lamp block and holder See page 8.40

Contact functions See page 8.40

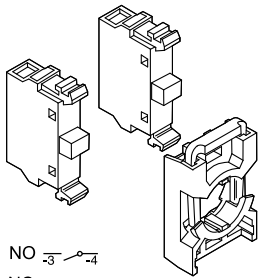
Ordering example See page 8.40

① No contact block in the center position

Key-operated selector switches ① 2 and 3 position



Δ Key code
1 Ronis 71
2 Ronis 72
3 Ronis 73



NO

NC

Description	The key can be removed in...	Catalog number	List price
2-position			
Black plastic bezel			
Maintained B & C	B & C	G1M2SSK1-10Δ	\$ 49
Maintained B & C	B only	G1M2SSK2-10Δ	
Spring return C to B	B only	G1M2SSK3-10Δ	
Chrome bezel			
Maintained B & C	B & C	G2M2SSK1-30Δ	51
Maintained B & C	B only	G2M2SSK2-30Δ	
Spring return C to B	B only	G2M2SSK3-30Δ	
3-position			
Black plastic bezel			
Maintained A, B, &C	A, B & C	G1M3SSK1-10Δ	61
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	
Chrome bezel			
Maintained A, B, &C	A, B & C	G2M3SSK1-30Δ	63
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	

Contact blocks and holder

Blocks	Catalog number	Ref. code	List price
2 NO with holder	MCBH-20	1SFA 611 605 R1102	\$ 18.00
2 NC with holder	MCBH-02	1SFA 611 605 R1120	
1 NO + 1 NC with holder	MCBH-11	1SFA 611 605 R1111	
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00

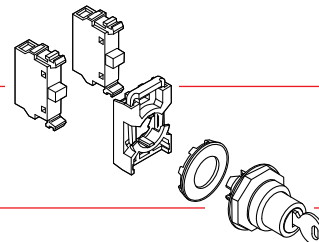
Contact functions

2 positions: See Page 8.38
3 positions: See Page 8.40

Ordering example

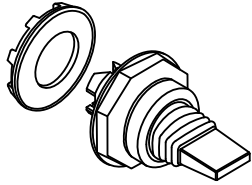
Requested: A key-operated selector switch. Three positions. Maintained. The key removeable in position B. Key code 72. With 2 NC contacts

Ref.: 1 piece of G1M3SSK2-402 + 1 piece of MCBH-02

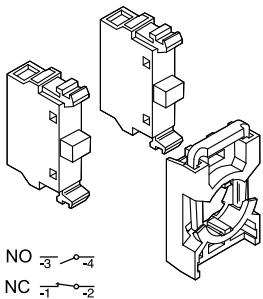


① Includes two keys

Toggle switches 2 and 3 position



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



Description

2-position

Maintained, black bezel
Maintained, chrome bezel

Catalog number

G1MTS1-10B
G2MTS1-30B

List price

\$ 26.00
28.00

3-position

Maintained, black bezel
Maintained, chrome bezel
Spring return from A and C to B, black bezel
Spring return from A and C to B, chrome bezel

G1MTS3-10B
G2MTS3-30B
G1MTS2-10B
G2MTS2-30B

26.00
28.00
26.00
28.00

Contact blocks and holder

Blocks

Blocks	Catalog number	Ref. code	List price
1 NO with holder	MCBH-10	1SFA 611 605 R1101	\$ 10.00
1 NC with holder	MCBH-01	1SFA 611 605 R1110	10.00
2 NO with holder	MCBH-20	1SFA 611 605 R1102	18.00
2 NC with holder	MCBH-02	1SFA 611 605 R1120	18.00
1 NO + 1 NC with holder	MCBH-11	1SFA 611 605 R1111	18.00
1 NO without holder	MCB-10	1SFA 611 610 R1001	8.00
1 NC without holder	MCB-01	1SFA 611 610 R1010	8.00
Holder for 3 blocks	MCBH-00	1SFA 611 605 R1100	2.00

Contact block functions

Block positions as seen from operator front.

2-position maintained switch

Handle position	Left block	Right block
A	O	O
C	x	x

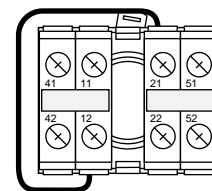
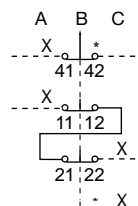
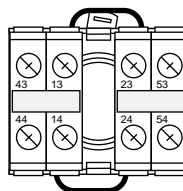
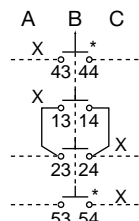
O = not actuated (normal state)
x = actuated (state changed)

3-position switch

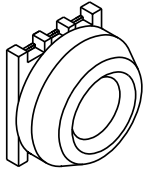
Handle position	Left block	Middle block	Right block
A	O	x	x
B	O	O	O
C	x	x	O

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

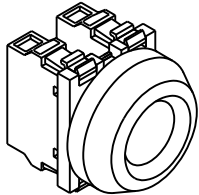
Center position connection detail



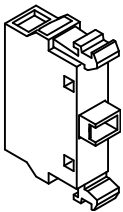
Definite purpose pushbuttons IP 66, and now NEMA 1, 3R, 4 & 4X!



Actuator only



Actuator with blocks



Contact block

Definite purpose pushbuttons

The definite purpose pushbutton, 30 mm, 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.

Included contact blocks	Membrane color	Catalog number	Ref. code	List price
1 NO + 1 NC	Black	1SFA616105R4076	1SFA 616 105 R4076	\$ 45.00
1 NO	Black	1SFA616105R4016	1SFA 616 105 R4016	37.00
1 NC	Black	1SFA616105R4046	1SFA 616 105 R4046	37.00
2 NO	Black	1SFA616105R4026	1SFA 616 105 R4026	45.00
2 NC	Black	1SFA616105R4056	1SFA 616 105 R4056	45.00
-	Red	KP6-40R	1SFA 616 105 R4001	29.00
-	Green	KP6-40G	1SFA 616 105 R4002	29.00
-	Black	KP6-40B	1SFA 616 105 R4006	29.00

Contact block

Description	Catalog number	Ref. code	List price
1 NO	MCB-10	1SFA 611 610 R1001	\$ 8.00
1 NC	MCB-01	1SFA 611 610 R1010	

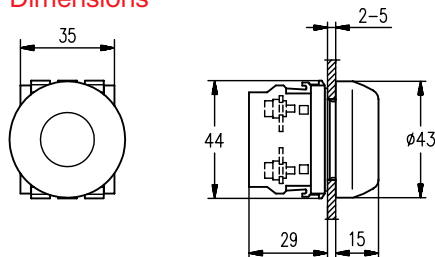
Accessories

Description	Catalog number	Ref. code	List price
Guide washer for positioning and anti rotation	2154 373-1	2154 373-1	\$ 2.00

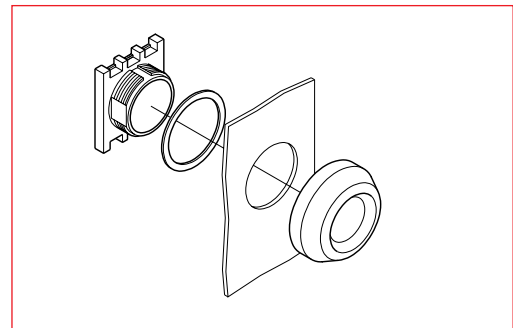
Technical data

Degree of protection	NEMA 4X, IP66
Ambient temperature	-30° ...+70°

Dimensions

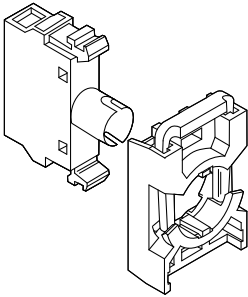
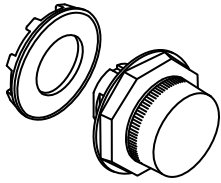


Mounting



Pilot lights

Pilot Devices
Modular Range
30mm



Lamp block + holder



Diffusing lens

- Δ Lens color
- R Red
 - G Green
 - Y Yellow
 - L Blue
 - W White
 - C Clear

Description

Black plastic mounting ring
Chrome mounting ring

Catalog number

G1ML1-100Δ
G2ML1-100Δ

List price

\$ 12.50
14.50

Lamp blocks with holder [Ⓢ]

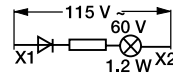
Supply voltage

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



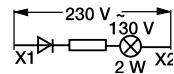
115 V AC supply voltage.

For 60 V filament bulb max. 1.2 W



230 V AC supply voltage.

For 130 V filament bulb max. 2 W



Catalog number

MCBH-001

Ref. code

1SFA 611 605 R1200

List price

\$ 19.50

MCBH-002

1SFA 611 605 R1300

23.50

MCBH-003

1SFA 611 605 R1400

23.50

Light diffusing lens

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

Description

The lens is used instead of text cap

Catalog number

KA1-8005

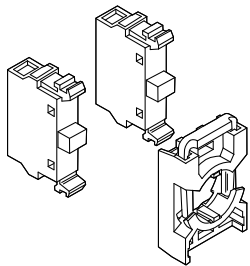
Ref. code

1SFA 616 920 R8005

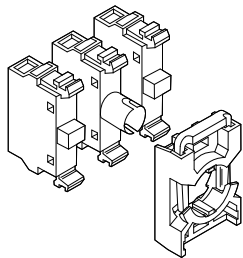
List price

\$ 3.00

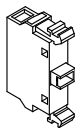
[Ⓢ] Bulb not included. See page 8.48



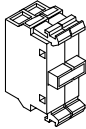
Contact block + holder



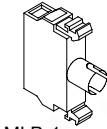
Contacts and lamp block + holder



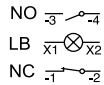
MCB-10



MCB-20



MLB-1



Contact blocks and lamp blocks with holder for front mounting

Max. number of blocks in holder	Included blocks	Catalog number	Ref. code	List price
For non-illuminated operators				
3	1 NC	MCBH-01	1SFA 611 605 R1110	\$ 10.00
3	1 NO	MCBH-10	1SFA 611 605 R1101	10.00
3	2 NC	MCBH-02	1SFA 611 605 R1120	18.00
3	2 NO	MCBH-20	1SFA 611 605 R1102	18.00
3	3 NC	MCBH-03	1SFA 611 605 R1130	26.00
3	3 NO	MCBH-30	1SFA 611 605 R1103	26.00
3	1 NO + 1 NC	MCBH-11	1SFA 611 605 R1111	18.00
3	1 NO + 2 NC	MCBH-12	1SFA 611 605 R1121	26.00
3	2 NO + 1 NC	MCBH-21	1SFA 611 605 R1112	26.00
For illuminated operators				
3	1 NC + 1 LB	MCBH-011	1SFA 611 605 R1210	27.50
3	1 NO + 1 LB	MCBH-101	1SFA 611 605 R1201	27.50
3	1 NO + 1 NC + 1 LB	MCBH-111	1SFA 611 605 R1211	35.50
3	2 NC + 1 LB	MCBH-021	1SFA 611 605 R1220	35.50
3	2 NO + 1 LB	MCBH-201	1SFA 611 605 R1202	35.50

Single contact blocks for front mounting

Included blocks	Catalog number	Ref. code	List price
1 NO	MCB-10	1SFA 611 610 R1001	\$ 8.00
1 NC	MCB-01	1SFA 611 610 R1010	8.00
1 NO with gold plated contacts	MCB-10G	1SFA 611 610 R1101	16.00
1 NC with gold plated contacts	MCB-01G	1SFA 611 610 R1110	16.00

Double contact block for front mounting

To be used together with MCBH5-00 when contact blocks in position 4- and 5- are needed.
Also when using MCBH-00 together with selector switch and contact block in position 3- is needed

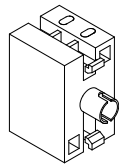
Included blocks	Catalog number	Ref. code	List price
2 NO	MCB-20	1SFA 611 610 R1002	\$ 16.00
2 NC	MCB-02	1SFA 611 610 R1020	
1 NO + 1 NC	MCB-11	1SFA 611 610 R1011	

Single lamp blocks for front mounting, Ba 9s base

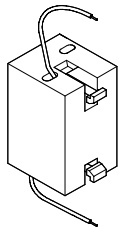
Description	Catalog number	Ref. code	List price
For max. 2 W, 230 V AC and DC filament bulb or LED	MLB-1	1SFA 611 620 R1001	\$ 17.50
115 V AC supply voltage. For 60 V filament bulb max. 1.2 W	MLB-2	1SFA 611 620 R1002	21.50
230 V AC supply voltage. For 130 V filament bulb max. 2 W	MLB-3	1SFA 611 620 R1003	21.50
115 V AC and DC supply voltage For 24 V LED	MLB-4	1SFA 611 620 R1004	21.50
24 V AC and DC supply voltage. With resistor. Intended for electronic circuits. The resistor limits the making current and protects against disturbances in the electronic circuit For 24 V filament bulb	MLB-5	1SFA 611 620 R1005	21.50
With Zener diode max 230V AC/DC, LEDs Used in applications where voltage interference is a problem (i.e., the LED is visibly lit although control voltage is off.)	MLB-8	1SFA 611 620 R1008	19.00

Accessories

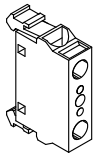
Pilot Devices
Modular Range
30mm



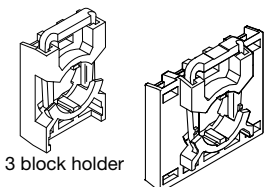
Transformer block with lamp holder for pilot lights



Transformer block for illuminated operators



Diode block



3 block holder

5 block holder

Transformer block

For 6 or 24 V filament bulb and 24 V LED. Rated power 1.5 W.

Primary voltage	Secondary voltage	Bulb Suffix LED Filament	Catalog number	Ref. code	List price
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With lamp holder for front mounting, Ba 9s base

Intended to supply a 1.2 W filament bulb.

110 - 127 V AC 6 V AC	-	T1	KTR1-1001	1SFA 616 950 R1001	\$ 35.00
220 - 250 V AC 6 V AC	-	T2	KTR1-1002	1SFA 616 950 R1002	
380 - 420 V AC 6 V AC	-	T3	KTR1-1003	1SFA 616 950 R1003	
440 - 480 V AC 6 V AC	-	T4	KTR1-1004	1SFA 616 950 R1004	
500 - 600 V AC 6 V AC	-	T9	KTR1-1005	1SFA 616 950 R1005	
110 - 127 V AC 24 V AC ①	TL1	T5	KTR1-1011	1SFA 616 950 R1011	\$ 35.00
220 - 250 V AC 24 V AC ①	TL2	T6	KTR1-1012	1SFA 616 950 R1012	
380 - 420 V AC 24 V AC ①	TL3	T7	KTR1-1013	1SFA 616 950 R1013	
440 - 480 V AC 24 V AC ①	TL4	T8	KTR1-1014	1SFA 616 950 R1014	

For illuminated operators ②

Intended to supply a 1.2 W filament bulb mounted in lamp block MLB-1 (1SFA 611 620 R1001) only.

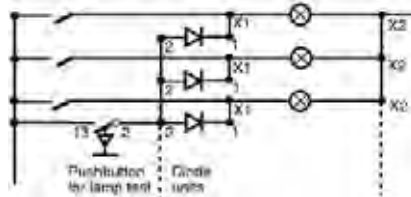
110 - 127V AC 6 V AC	-	T1	KTR1-2001	1SFA 616 950 R2001	35.00
220 - 250 V AC 6 V AC	-	T2	KTR1-2002	1SFA 616 950 R2002	
380 - 420 V AC 6 V AC	-	T3	KTR1-2003	1SFA 616 950 R2003	
440 - 480 V AC 6 V AC	-	T4	KTR1-2004	1SFA 616 950 R2004	
500 - 600 V AC 6 V AC	-	T9	KTR1-2005	1SFA 616 950 R2005	
110 - 127 V AC 24 V AC ①	TL1	T5	KTR1-2011	1SFA 616 950 R2011	35.00
220 - 250 V AC 24 V AC ①	TL2	T6	KTR1-2012	1SFA 616 950 R2012	
380 - 420 V AC 24 V AC ①	TL3	T7	KTR1-2013	1SFA 616 950 R2013	
440 - 480 V AC 24 V AC ①	TL4	T8	KTR1-2014	1SFA 616 950 R2014	

Diode block

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.

Description	Catalog number	Ref. code	List price
Diode block	MDB-1001	1SFA 611 630 R1001	\$ 14.00

Diagram for lamp test with three diode block



Holders

Description	Catalog number	Ref. code	List price
Holders for front mounting			
For three blocks	MCBH-00	1SFA 611 605 R1100	\$ 2.00
For five blocks	MCBH5-00	1SFA 611 601 R1100	4.00

① Can be used with LED bulb

② To be used with directly supplied lamp blocks only.

Accessories



LEDs

With one diode chip mounted on a Ba 9s base. Choose the same color for the LED and the lamp cap or else use a clear lamp cap.

For white light use white LED with clear lamp cap. At DC the lamp base have to be connected to cathode (-) and the bottom contact to anode (+).

Description				Catalog No.	Ref. Code	List Price
Color	Rated current mA	Wave-length nm	Luminance mcd			
Rated voltage 12 V, DC Service life >50 000 h						
Red	15	630	250	KA2-2011	1SFA 616 921 R2011	\$ 21.00
Green	15	525	1000	KA2-2012	1SFA 616 921 R2012	
Yellow	15	592	250	KA2-2013	1SFA 616 921 R2013	
Blue	15	470	450	KA2-2014	1SFA 616 921 R2014	
White	15	x=0.31 y=0.32	600	KA2-2015	1SFA 616 921 R2015	
Rated voltage 24 V, (AC)/DC Ⓞ Service life >50 000 h						
Red	15	630	250	KA2-2021	1SFA 616 921 R2021	15.00
Green	15	525	800	KA2-2022	1SFA 616 921 R2022	
Yellow	15	592	250	KA2-2023	1SFA 616 921 R2023	
Blue	15	470	400	KA2-2024	1SFA 616 921 R2024	
White	15	x=0.31 y=0.32	500	KA2-2025	1SFA 616 921 R2025	
Rated voltage 36 V, (AC)/DC Ⓞ Service life >50 000 h						
Red	12	630	250	KA2-2031	1SFA 616 921 R2031	21.00
Green	12	525	800	KA2-2032	1SFA 616 921 R2032	
Yellow	12	592	250	KA2-2033	1SFA 616 921 R2033	
Blue	12	470	400	KA2-2034	1SFA 616 921 R2034	
White	12	x=0.31 y=0.32	500	KA2-2035	1SFA 616 921 R2035	
Rated voltage 48 V, (AC)/DC Ⓞ Service life >50 000 h						
Red	12	630	200	KA2-2041	1SFA 616 921 R2041	15.00
Green	12	525	1700	KA2-2042	1SFA 616 921 R2042	
Yellow	12	592	240	KA2-2043	1SFA 616 921 R2043	
Blue	12	470	720	KA2-2044	1SFA 616 921 R2044	
White	12	x=0.31 y=0.32	1200	KA2-2045	1SFA 616 921 R2045	
Rated voltage 60 V, (AC)/DC Ⓞ Service life >50 000 h						
Red	10	630	160	KA2-2051	1SFA 616 921 R2051	21.00
Green	10	525	1400	KA2-2052	1SFA 616 921 R2052	
Yellow	10	592	200	KA2-2053	1SFA 616 921 R2053	
Blue	10	470	600	KA2-2054	1SFA 616 921 R2054	
White	10	x=0.31 y=0.32	1000	KA2-2055	1SFA 616 921 R2055	
Rated voltage 110-130 V, AC Ⓞ Service life 25 000 h						
Red	4-6	630	60-100	KA2-2131	1SFA 616 921 R2131	15.00
Green	4-6	525	500-850	KA2-2132	1SFA 616 921 R2132	
Yellow	4-6	592	70-120	KA2-2133	1SFA 616 921 R2133	
Blue	4-6	470	220-350	KA2-2134	1SFA 616 921 R2134	
White	4-6	x=0.31 y=0.32	350-600	KA2-2135	1SFA 616 921 R2135	
Rated voltage 110-130 V, AC/DC Ⓞ Service life 25 000 h						
Red	4-6	630	60-100	KA2-2141	1SFA 616 921 R2141	21.00
Green	4-6	525	500-850	KA2-2142	1SFA 616 921 R2142	
Yellow	4-6	592	70-120	KA2-2143	1SFA 616 921 R2143	
Blue	4-6	470	220-350	KA2-2144	1SFA 616 921 R2144	
White	4-6	x=0.31 y=0.32	350-600	KA2-2145	1SFA 616 921 R2145	
Rated voltage 230 V, AC Ⓞ Service life 25 000 h						
Red	4	630	60	KA2-2221	1SFA 616 921 R2221	21.00
Green	4	525	500	KA2-2222	1SFA 616 921 R2222	
Yellow	4	592	70	KA2-2223	1SFA 616 921 R2223	
Blue	4	470	220	KA2-2224	1SFA 616 921 R2224	
White	4	x=0.31 y=0.32	350	KA2-2225	1SFA 616 921 R2225	
Rated voltage 230 V, AC/DC Ⓞ Service life 25 000 h						
Red	4	630	60	KA2-2231	1SFA 616 921 R2221	21.00
Green	4	525	500	KA2-2232	1SFA 616 921 R2222	
Yellow	4	592	70	KA2-2233	1SFA 616 921 R2223	
Blue	4	470	220	KA2-2234	1SFA 616 921 R2224	
White	4	x=0.31 y=0.32	350	KA2-2235	1SFA 616 921 R2225	

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

Accessories

Pilot Devices
Modular Range
30mm



Filament bulb

Filament bulbs

Ba 9s base. A lamp changing tool is required for changing bulb.

Description					Catalog number	Ref. code	List price
Rated voltage V	Rated current mA	Rated output W	Service life h	Lumiance mcd			
6	200	1.2	10 000	350	5911 086-11	5911 086-11	\$ 6.00
12	100	1.2	10 000	230	5911 086-12	5911 086-12	
24	50	1.2	10 000	280	5911 086-13	5911 086-13	
30	40	1.2	10 000	250	5911 086-4	5911 086-4	
48	42	2	6 000	500	5911 086-5	5911 086-5	
60	20	1.2	5 000	190	5911 086-14	5911 086-14	
110	18	2	7 500	250	5911 086-7	5911 086-7	
130	15	2	7 500	120	5911 086-15	5911 086-15	



Flashing LED

Flashing LED

A lamp changing tool is required for changing bulb.

Choose the same color for the LED and the lamp cap or use a clear lamp cap.

The lamp base has to be connected to cathode (-) and the bottom contact to anode (+).

Description					Catalog number	Ref. code	List price
Color	Wave length nm	Service life hours					
Rated voltage 24 V, rated current 25 mA, DC							
Red	630	50 000		4950 512-1	4950 512-1		\$ 20.00
Green	565	50 000		4950 512-2	4950 512-2		44.25
Yellow	585	50 000		4950 512-3	4950 512-3		20.00

Accessories



Lamp tool



Mounting tool



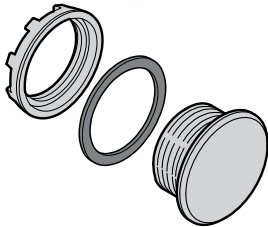
30mm adaptors



Flush mount adaptor



Extra key



Blanking plug



30mm gasket

Lamp changing tool

Description	Catalog number	Ref. code	List price
For LEDs and for bulbs	KA1-8072	1SFA 616 920 R8072	\$ 10.00

Mounting tool

Description	Catalog number	Ref. code	List price
Used for tightening the sleeve	KA1-8015	1SFA 611 920 R8015	\$ 10.00

30mm adaptors

For use when fitting the 22 mm pilot devices in 30 mm mounting holes. (1.5 – 4 mm panels)

Description	Catalog number	Ref. code	List price
For use with emergency stop pushbuttons			
Black plastic	KA1-8027	1SFA 616 920 R8027	\$ 8.00
Metal	KA1-8028	1SFA 616 920 R8028	10.00

For use with pushbuttons, selector switches, pilot lights, potentiometers and buzzers

Black plastic	KA1-8029	1SFA 616 920 R8029	8.00
Metal	KA1-8030	1SFA 616 920 R8030	10.00

Flush mount adaptor, 30mm

Description	Catalog number	Ref. code	List price
For flush mounted pushbuttons	KA1-8073	1SFA 616 920 R8073	\$ 15.00
For flush mounted selector switches	KA1-8074	1SFA 616 920 R8074	

Extra key

Description	Catalog number	Ref. code	List price
Ronis 455 (key code 71)	SK 616 021-71	SK 616 021-71	\$ 10.00
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	

Blanking plug (30mm)

Description	Catalog number	Ref. code	List price
Black plastic	MA1-8133	1SFA 611 920 R8133	\$ 7.30

30mm gasket

Description	Catalog number	List price
Gasket, 30mm	1SFA616920R8018	\$ 1.50



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

Standards

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

Degrees of protection

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



Material

No ozone depleting substances in the products.

All front parts are made of polycarbonate

Material		
PC	Polycarbonate	High impact strength, good outdoor resistance. Can withstand light acid solutions, aliphatic hydrocarbons, paraffin, alcohols, animal and vegetable greases.
PSU	Polysulphone	Can withstand high temperatures, acids, basic solutions, alkaline compounds, oils, alcohols.
PA	Polyamide	Can withstand high temperatures, aliphatic, aromatic and chlorinated hydrocarbons, esters, ketone-aldehydes, alcohols and basic solutions.
PBT		Can withstand 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.
Rubber		Chloroprene Nitrile

Mechanical life

Operators

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

Temperature

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

8

Terminals

Plus-minus Pozidriv No.2 screw with DIN-washer.	
Connectable area	min. 1 x 0.5 mm ² /AWG 20 max. 2 x 2.5 mm ² /2 x AWG14
Recommended torque	0.9 Nm

Tightening torque

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

Contact blocks

Mechanical endurance	10 million operations
Self cleaning contacts of silver, NC contact with positive opening.	
At voltages and currents below 24 V and 5.6 mA two contact blocks in parallel are recommended. As an alternative, gold plated contacts can be used.	

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

Ratings as per IEC 60 947-5-1

Rated insulation voltage, U_i	690 V
Rated thermal current, I_{th}	10 A
Rated operational current, I_e	
utilisation category AC 15,	at 120 V 8 A 230 V 6 A 400 V 4 A 690 V 2 A
Rated operational current, I_e	
utilisation category DC 13,	at 24 V 5 A 125 V 1.1 A 250 V 0.55 A
Contact resistance	< 25 mΩ
Compulsory function test	at 5V, 16 mA

Max. number of contact blocks per operator ①

Pushbutton, toggle switch and mushroom pushbutton	6
Maintained pushbutton	4
Double pushbutton, selector switch, key operated selector switch and emergency stop pushbutton	4
Short circuit protection	
Max. fuse at 1 kA	16 A ordinary 10 A delayed

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

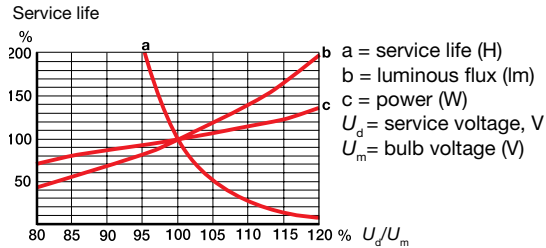
Lamp block

Ratings as per IEC 60 947-5-1

Rated insulation voltage	230 V
Base	Ba 9s
Permissible power, up to	2 W

Service life of filament bulb

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



Lamp comparison

Bulb Catalog No.	Approx. life (hours)	Shock and service immunity	High vibration temperature	Low power operating	Brightness consumption
Filament	5000 - 10 000	+	+	+	+++
LED	25 000 - 50 000	+++	++	++	++

Very good +++
Good ++
Less good +

Transformer block

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

Rated power	1.5 W
Rated voltage	Ratio, see Accessories page 8.25
Rated insulation voltage acc. to IEC 70 °C (DT)	Class E

Assembled Modular range



Assembled Modular Range 22mm



8

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

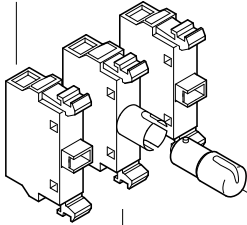
- Full voltage, resistor and transformer
- LED and filament bulbs available

Mounting

Exploded view

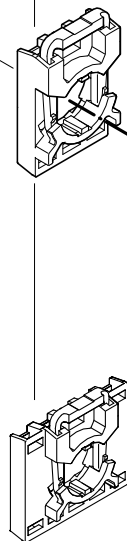
Contact block

Single pole with making or breaking contact

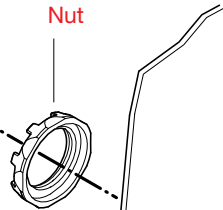


Holder

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

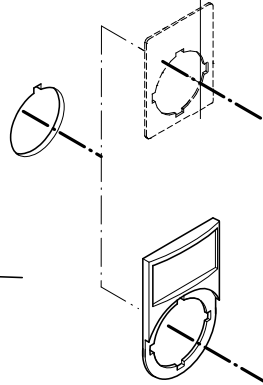


Nut



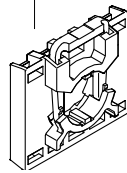
Legend plates

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

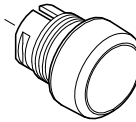
Illuminated pushbuttons, illuminated selector switches and pilot lights have a lamp block in the center position of the holder.



Five block holder

Operator

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



Bezels

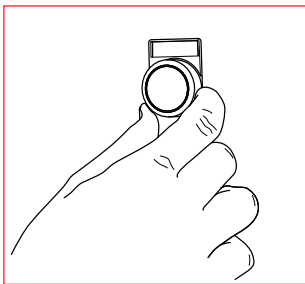
Pushbuttons, selector switches and toggle switches with bezel in black plastic, chrome metal are available.

Legend plate holder

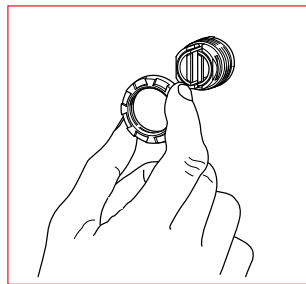
Of black plastic, insert of brushed aluminum. See the chapter, "Legend Plates" for more information.

8

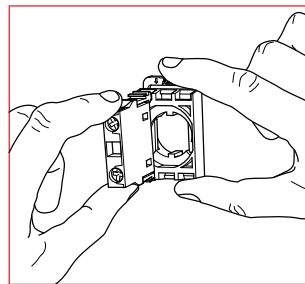
Easy to mount



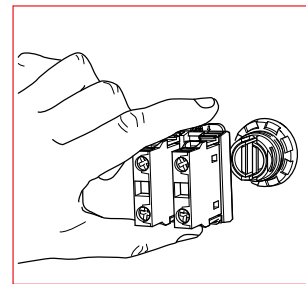
The operator is to be inserted from the front.....



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

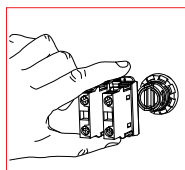
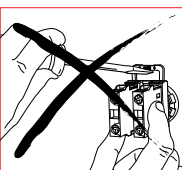


The contact blocks/lamp block are then snapped on to the holder...



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

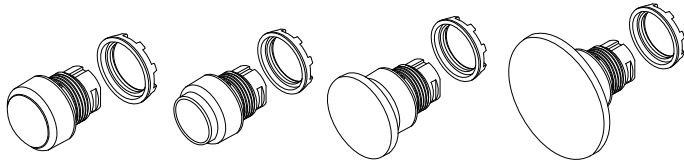
...and to remove



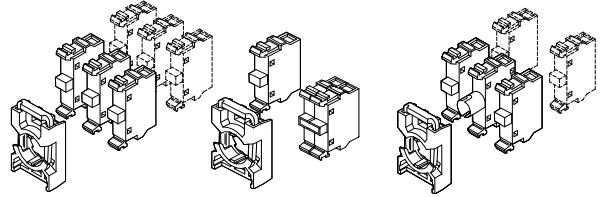
Press down the spring on the holder and pull the holder from the actuator.

Selection guide

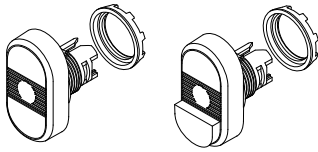
Pushbuttons and Mushroom pushbuttons



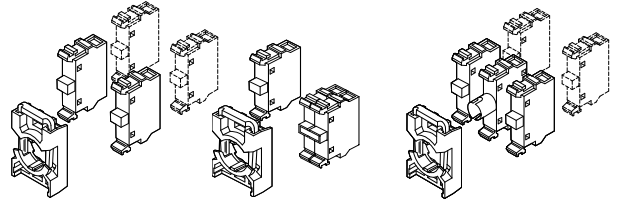
Contact block/lamp block combinations



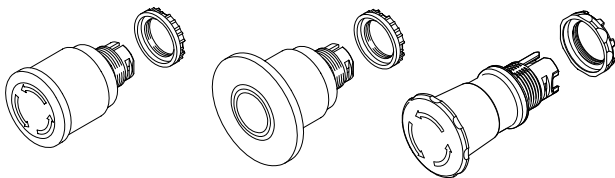
Double pushbuttons



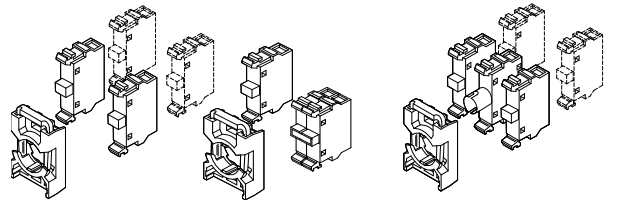
Contact block/lamp block combinations



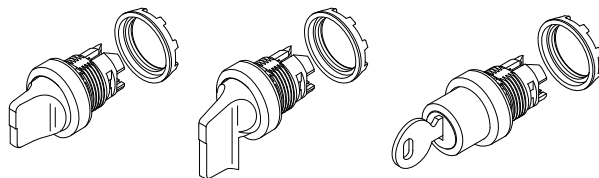
Emergency stop pushbuttons



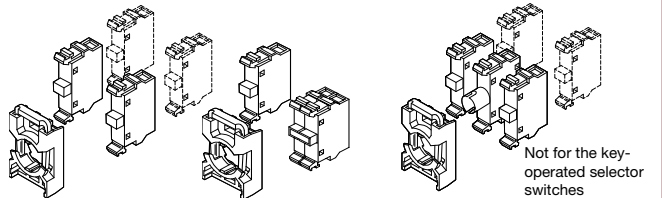
Contact block/lamp block combinations



Selector switches

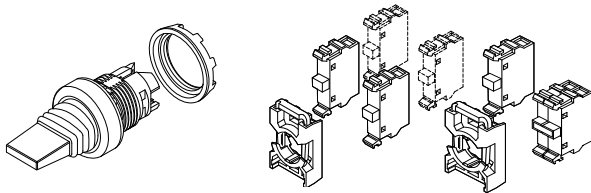


Contact block/lamp block combinations



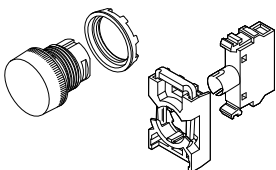
Toggle switches

Contact block combinations

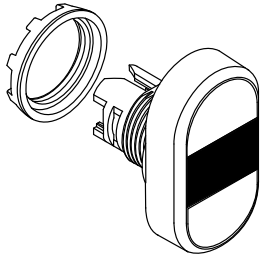


Pilot lights

Lamp block combination



Double pushbuttons, Flush/flush, non-illuminated ①

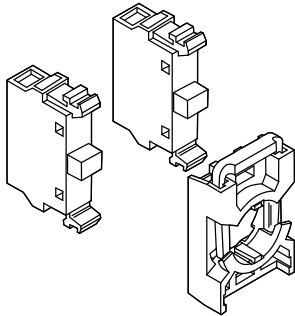


Double pushbutton

Double pushbuttons, flush/flush, non-illuminated ①

Options	Catalog number characters										List price		
	M	P	D	1	-								
Flush/Flush, Green/Red	M	P	D	1	-							\$ 18.00	
Flush/Flush, Green/Red, I/O	M	P	D	2	-							21.00	
Flush/Flush, Green/Red, ON/OFF	M	P	D	3	-							21.00	
Flush/Flush, Green/Red, START/STOP	M	P	D	4	-							21.00	
Flush/Flush, White/Black	M	P	D	5	-							18.00	
Flush/Flush, White/Black, I/O	M	P	D	6	-							21.00	
Flush/Flush, White/Black, ON/OFF	M	P	D	7	-							21.00	
Flush/Flush, White/Black, START/STOP	M	P	D	8	-							21.00	
With Holder							2	0				2.00	
Center Lens Color - Black									B			-	
Contact Blocks, 1NO										1	0	8.00	
Contact Blocks, 2NO										2	0	16.00	
Contact Blocks, 3NO										3	0	24.00	
Contact Blocks, 1NC										0	1	8.00	
Contact Blocks, 2NC										0	2	16.00	
Contact Blocks, 3NC										0	3	24.00	
Contact Blocks, 1NO+1NC										1	1	16.00	
Contact Blocks, 2NO+1NC										2	1	24.00	
Contact Blocks, 1NO+2NC										1	2	24.00	
Contact Blocks, 1NO, Gold										1	0	16.00	
Contact Blocks, 2NO, Gold										2	0	32.00	
Contact Blocks, 3NO, Gold										3	0	48.00	
Contact Blocks, 1NC, Gold										0	1	16.00	
Contact Blocks, 2NC, Gold										0	2	32.00	
Contact Blocks, 3NC, Gold										0	3	48.00	
Contact Blocks, 1NO+1NC, Gold										1	1	32.00	
Contact Blocks, 2NO+1NC, Gold										2	1	48.00	
Contact Blocks, 1NO+2NC, Gold										1	2	48.00	
5 Block Holder												5	4.00

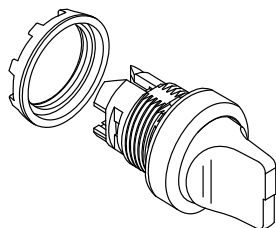
See catalog number explanation on page 8.56.



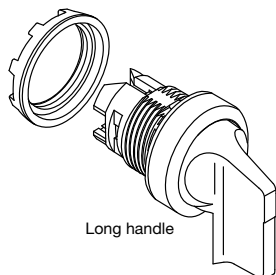
① No contact block in center position.

Selector switches, 2 position Illuminated ①

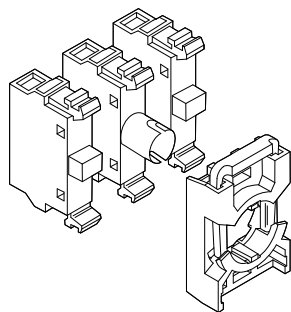
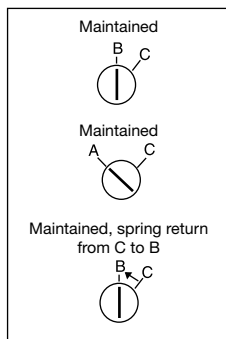
Selector switches, 2 position, illuminated ①



Short handle



Long handle



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)

Options	Catalog number characters										List price		
Short/Main B&C	M	2	S	S	1	-						\$ 11.00	
Short/Main A&C	M	2	S	S	2	-						11.00	
Short/Spring Return C to B	M	2	S	S	3	-						14.00	
Long/Main B&C	M	2	S	S	4	-						11.00	
Long/Main A&C	M	2	S	S	5	-						11.00	
Long/Spring Return C to B	M	2	S	S	6	-						14.00	
Bezel, Black Plastic, with Holder						-	4					2.00	
Bezel, Chrome Metal, with Holder						-	6					2.00	
Illuminated without Lamp block ②						-		1				-	
Lamp block, MLB-1, Bulb not Included						-		2				17.50	
Lamp block, MLB-2, Bulb not Included						-		3				21.50	
Lamp block, MLB-3, Bulb not Included						-		4				21.50	
Lamp block, MLB-4, Bulb not Included						-		5				21.50	
Lamp block, MLB-5, Bulb not Included						-		6				21.50	
Switch Color - Red						-			R			-	
Switch Color - Green						-			G			-	
Switch Color - Yellow						-			Y			-	
Switch Color - Blue						-			L			-	
Switch Color - Clear						-			C			-	
Contact Blocks, 1NO						-		1	0			8.00	
Contact Blocks, 2NO						-		2	0			16.00	
Contact Blocks, 3NO						-		3	0			24.00	
Contact Blocks, 1NC						-		0	1			8.00	
Contact Blocks, 2NC						-		0	2			16.00	
Contact Blocks, 3NC						-		0	3			24.00	
Contact Blocks, 1NO+1NC						-		1	1			16.00	
Contact Blocks, 2NO+1NC						-		2	1			24.00	
Contact Blocks, 1NO+2NC						-		1	2			24.00	
Contact Blocks, 1NO, Gold						-		1	0	G		16.00	
Contact Blocks, 2NO, Gold						-		2	0	G		32.00	
Contact Blocks, 3NO, Gold						-		3	0	G		48.00	
Contact Blocks, 1NC, Gold						-		0	1	G		16.00	
Contact Blocks, 2NC, Gold						-		0	2	G		32.00	
Contact Blocks, 3NC, Gold						-		0	3	G		48.00	
Contact Blocks, 1NO+1NC, Gold						-		1	1	G		32.00	
Contact Blocks, 2NO+1NC, Gold						-		2	1	G		48.00	
Contact Blocks, 1NO+2NC, Gold						-		1	2	G		48.00	
Filament Bulb 6V						-				F	6	6.00	
Filament Bulb 12V						-				F	7	6.00	
Filament Bulb 24V						-				F	8	6.00	
Filament Bulb 30V						-				F	3 0	6.00	
Filament Bulb 48V						-				F	9	6.00	
Filament Bulb 60V						-				F	6 0	6.00	
Filament Bulb 110V						-				F	1 1	6.00	
Filament Bulb 130V						-				F	1	6.00	
LED 12VDC						-				L	7	21.00	
LED 24VAC/DC						-				L	8	15.00	
LED 48VAC/DC						-				L	9	15.00	
LED 60VAC/DC						-				L	6 0	21.00	
LED 110-130VAC						-				L	1	15.00	
LED 110-130VAC/DC						-				L	1 3	21.00	
LED 230V						-				L	2	21.00	
Transformer Block 110-127/6VBulb						-				T	1	41.00	
Transformer Block 220-240/6VBulb						-				T	2	41.00	
Transformer Block 380-420/6VBulb						-				T	3	41.00	
Transformer Block 440-480/6VBulb						-				T	4	41.00	
Transformer Block 500-600/6VBulb						-				T	5	41.00	
Transformer Block 110-127/24VBulb						-				T	6	41.00	
Transformer Block 220-240/24VBulb						-				T	7	41.00	
Transformer Block 380-420/24VBulb						-				T	8	41.00	
Transformer Block 440-480/24VBulb						-				T	9	41.00	
Transformer Block 110-127/24VLED						-				T	L 1	50.00	
Transformer Block 220-240/24VLED						-				T	L 2	50.00	
Transformer Block 380-420/24VLED						-				T	L 3	50.00	
Transformer Block 440-480/24VLED						-				T	L 4	50.00	
5 Block Holder						-						5	4.00
30mm Black Plastic Adaptor Ring ③	G												8.00
30mm Chrome Metal Adaptor Ring ③	G												10.00

See catalog number explanation on page 8.56.

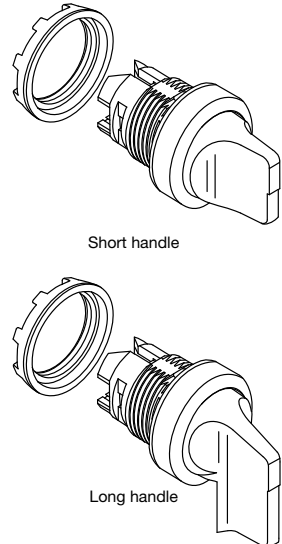
① No contact block in center position.

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

③ For 30mm devices, use Discount Schedule CC.

Selector switches, 3 position Non-Illuminated ①


Selector switches, 3 position, non-illuminated ①




Short handle

Long handle


Maintained




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

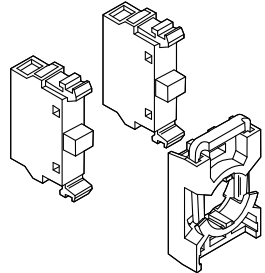


Momentary, spring return from C to B



Momentary, spring return from A to B





Contact functions
Block positions as seen from operator front.

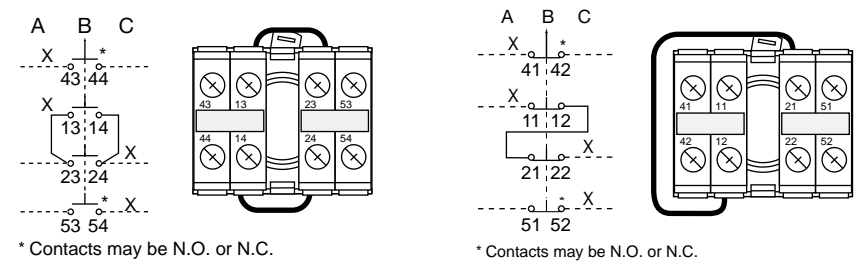
Handle position	Left block	Right block
A	X	O
B	O	O
C	O	X

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

Options	Catalog number characters										List price		
Short/3-Main	M	3	S	S	1	-						\$ 11.00	
Short/Spring Return to B	M	3	S	S	2	-						11.00	
Short/Main A&B/Spring Return C to B	M	3	S	S	3	-						14.00	
Long/3-Main	M	3	S	S	4	-						11.00	
Long/Spring Return to B	M	3	S	S	5	-						11.00	
Long/Main A&B/Spring Return C to B	M	3	S	S	6	-						14.00	
Short/Main B&C/Spring Return A to B	M	3	S	S	7	-						14.00	
Long/Main B&C/Spring Return A to B	M	3	S	S	8	-						14.00	
Bezel, Black Plastic, with Holder							-	4	0			2.00	
Bezel, Chrome Metal, with Holder							-	6	0			2.00	
Switch Color - Red										R		-	
Switch Color - Black										B		-	
Switch Color - Grey										U		-	
Contact Blocks, 1NO									1	0		8.00	
Contact Blocks, 2NO									2	0		16.00	
Contact Blocks, 3NO									3	0		24.00	
Contact Blocks, 1NC									0	1		8.00	
Contact Blocks, 2NC									0	2		16.00	
Contact Blocks, 3NC									0	3		24.00	
Contact Blocks, 1NO+1NC									1	1		16.00	
Contact Blocks, 2NO+1NC									2	1		24.00	
Contact Blocks, 1NO+2NC									1	2		24.00	
Contact Blocks, 1NO, Gold									1	0	G	16.00	
Contact Blocks, 2NO, Gold									2	0	G	32.00	
Contact Blocks, 3NO, Gold									3	0	G	48.00	
Contact Blocks, 1NC, Gold									0	1	G	16.00	
Contact Blocks, 2NC, Gold									0	2	G	32.00	
Contact Blocks, 3NC, Gold									0	3	G	48.00	
Contact Blocks, 1NO+1NC, Gold									1	1	G	32.00	
Contact Blocks, 2NO+1NC, Gold									2	1	G	48.00	
Contact Blocks, 1NO+2NC, Gold									1	2	G	48.00	
5 Block Holder												5	4.00
30mm Black Plastic Adaptor Ring ②	G	1											8.00
30mm Chrome Metal Adaptor Ring ②	G	2											10.00

See catalog number explanation on page 8.56.

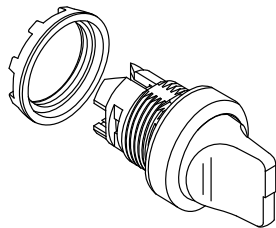
Center position connection detail



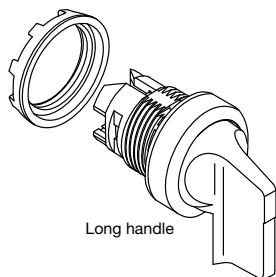
① No contact block in center position.
② For 30mm devices, use Discount Schedule CC.

Selector switches, 3 position Illuminated ①

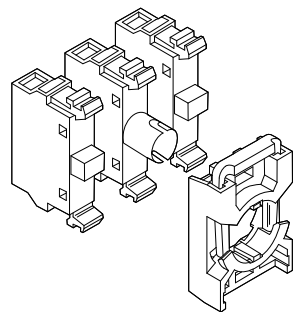
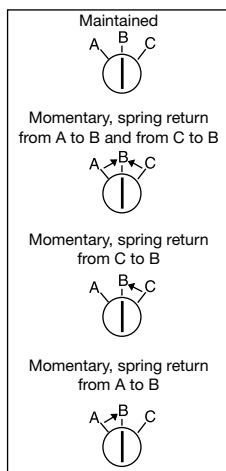
Selector switches, 3 position, illuminated ①



Short handle



Long handle



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)

Options	Catalog number characters										List price				
Short/3-Main	M	3	S	S	1	-						\$ 11.00			
Short/Spring Return to B	M	3	S	S	2	-						14.00			
Short/Main A&B/Spring Return C to B	M	3	S	S	3	-						14.00			
Long/3-Main	M	3	S	S	4	-						11.00			
Long/Spring Return to B	M	3	S	S	5	-						14.00			
Long/Main A&B/Spring Return C to B	M	3	S	S	6	-						14.00			
Short/Main B&C/Spring Return A to B	M	3	S	S	7	-						14.00			
Long/Main B&C/Spring Return A to B	M	3	S	S	8	-						14.00			
Bezel, Black Plastic, with Holder										4		2.00			
Bezel, Chrome Metal, with Holder										6		2.00			
Illuminated without Lamp block ②										1		-			
Lamp block, MLB-1, Bulb not Included										2		17.50			
Lamp block, MLB-2, Bulb not Included										3		21.50			
Lamp block, MLB-3, Bulb not Included										4		21.50			
Lamp block, MLB-4, Bulb not Included										5		21.50			
Lamp block, MLB-5, Bulb not Included										6		21.50			
Switch Color - Red									R			-			
Switch Color - Green									G			-			
Switch Color - Yellow									Y			-			
Switch Color - Blue									L			-			
Switch Color - Clear									C			-			
Contact Blocks, 1NO										1	0	8.00			
Contact Blocks, 2NO										2	0	16.00			
Contact Blocks, 3NO										3	0	24.00			
Contact Blocks, 1NC										0	1	8.00			
Contact Blocks, 2NC										0	2	16.00			
Contact Blocks, 3NC										0	3	24.00			
Contact Blocks, 1NO+1NC										1	1	16.00			
Contact Blocks, 2NO+1NC										2	1	24.00			
Contact Blocks, 1NO+2NC										1	2	24.00			
Contact Blocks, 1NO, Gold										1	0	G	16.00		
Contact Blocks, 2NO, Gold										2	0	G	32.00		
Contact Blocks, 3NO, Gold										3	0	G	48.00		
Contact Blocks, 1NC, Gold										0	1	G	16.00		
Contact Blocks, 2NC, Gold										0	2	G	32.00		
Contact Blocks, 3NC, Gold										0	3	G	48.00		
Contact Blocks, 1NO+1NC, Gold										1	1	G	32.00		
Contact Blocks, 2NO+1NC, Gold										2	1	G	48.00		
Contact Blocks, 1NO+2NC, Gold										1	2	G	48.00		
Filament Bulb 6V											F	6	6.00		
Filament Bulb 12V											F	7	6.00		
Filament Bulb 24V											F	8	6.00		
Filament Bulb 30V											F	3	0	6.00	
Filament Bulb 48V											F	9	6.00		
Filament Bulb 60V											F	6	0	6.00	
Filament Bulb 110V											F	1	1	6.00	
Filament Bulb 130V											F	1		6.00	
LED 12VDC											L	7		21.00	
LED 24VAC/DC											L	8		15.00	
LED 48VAC/DC											L	9		15.00	
LED 60VAC/DC											L	6	0	21.00	
LED 110-130VAC											L	1		15.00	
LED 110-130VAC/DC											L	1	3	21.00	
LED 230V											L	2		21.00	
Transformer Block 110-127/6VBulb											T	1		41.00	
Transformer Block 220-240/6VBulb											T	2		41.00	
Transformer Block 380-420/6VBulb											T	3		41.00	
Transformer Block 440-480/6VBulb											T	4		41.00	
Transformer Block 500-600/6VBulb											T	5		41.00	
Transformer Block 110-127/24VBulb											T	6		41.00	
Transformer Block 220-240/24VBulb											T	7		41.00	
Transformer Block 380-420/24VBulb											T	8		41.00	
Transformer Block 440-480/24VBulb											T	9		41.00	
Transformer Block 110-127/24VLED											T	L	1	50.00	
Transformer Block 220-240/24VLED											T	L	2	50.00	
Transformer Block 380-420/24VLED											T	L	3	50.00	
Transformer Block 440-480/24VLED											T	L	4	50.00	
5 Block Holder														5	4.00
30mm Black Plastic Adaptor Ring ③	G														8.00
30mm Chrome Metal Adaptor Ring ③	G														10.00

See catalog number explanation on page 8.56.

Center position connection detail

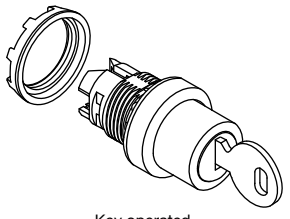
See page 8.67.

① No contact block in center position.

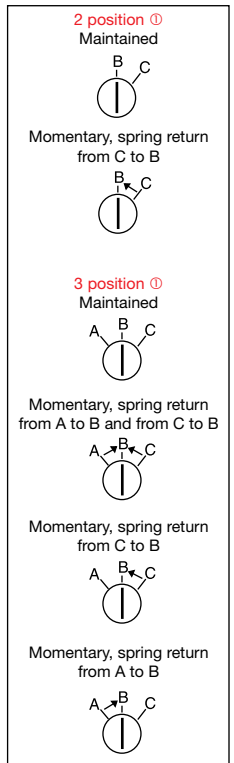
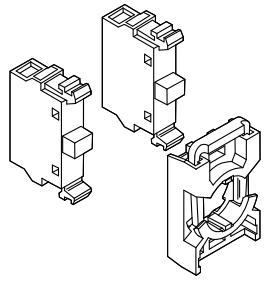
② No filament bulb, LED or transformer block can be combined with "illuminated without lamp block" selection.

③ For 30mm devices, use Discount Schedule CC.

Key-operated selector switches 2 & 3 position ①



Key operated



Key-operated selector switches, 2 & 3 position ①

Options	Catalog number characters										List price		
2 Maintained Positions, Key Removable in B and C	M	2	S	S	K	1	-					\$ 41.00	
2 Maintained Positions, Key Removable in B	M	2	S	S	K	2	-					41.00	
2 Positions, Spring Return from C to B, Key Removable in B	M	2	S	S	K	3	-					41.00	
3 Maintained Positions, Key Removable in A, B and C	M	3	S	S	K	1	-					53.00	
3 Maintained Positions, Key Removable in B	M	3	S	S	K	2	-					53.00	
3 Positions, Spring Return from A and C to B, Key Removable in B	M	3	S	S	K	3	-					53.00	
3 Positions, A and B maintained, Spring Return C to B, Key Removable in A	M	3	S	S	K	4	-					53.00	
3 Positions, A and B maintained, Spring Return C to B, Key Removable in All Positions	M	3	S	S	K	5	-					53.00	
Bezel, Black Plastic, with Holder								-	4	0		2.00	
Bezel, Chrome Metal, with Holder								-	6	0		2.00	
Key Code 71										1		-	
Key Code 72										2		-	
Key Code 73										3		-	
Other Key Code										4		-	
Contact Blocks, 1NO										1	0	8.00	
Contact Blocks, 2NO										2	0	16.00	
Contact Blocks, 3NO										3	0	24.00	
Contact Blocks, 1NC										0	1	8.00	
Contact Blocks, 2NC										0	2	16.00	
Contact Blocks, 3NC										0	3	24.00	
Contact Blocks, 1NO+1NC										1	1	16.00	
Contact Blocks, 2NO+1NC										2	1	24.00	
Contact Blocks, 1NO+2NC										1	2	24.00	
Contact Blocks, 1NO, Gold										1	0	G	16.00
Contact Blocks, 2NO, Gold										2	0	G	32.00
Contact Blocks, 3NO, Gold										3	0	G	48.00
Contact Blocks, 1NC, Gold										0	1	G	16.00
Contact Blocks, 2NC, Gold										0	2	G	32.00
Contact Blocks, 3NC, Gold										0	3	G	48.00
Contact Blocks, 1NO+1NC, Gold										1	1	G	32.00
Contact Blocks, 2NO+1NC, Gold										2	1	G	48.00
Contact Blocks, 1NO+2NC, Gold										1	2	G	48.00
5 Block Holder												5	4.00
30mm Black Plastic Adaptor Ring ②	G	1											8.00
30mm Chrome Metal Adaptor Ring ②	G	2											10.00

Extra key

Description	Catalog No.	Reference code	List Price
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	\$ 10.00
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

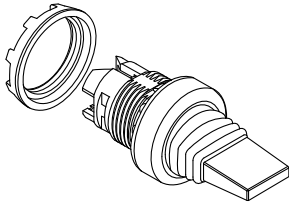
Handle position	Left block	Right block
A	O	X
B	O	O
C	X	O

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

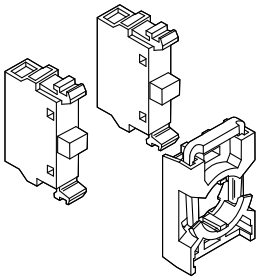
① No contact block in center position.
② For 30mm devices, use Discount Schedule CC.

Toggle switches

Toggle switches



Toggle switch



Maintained



Options	Catalog number characters										List price	
	M	T	S	1	-	4	0	6	0	B		
2 Maintained Positions				1	-							\$ 18.00
3 Positions, Spring Return to Center				2	-							18.00
3 Maintained Positions				3	-							18.00
Bezel, Black, with Holder						4	0					2.00
Bezel, Chrome, with Holder						6	0					2.00
Switch Color - Black									B			-
Contact Blocks, 1NO									1	0		8.00
Contact Blocks, 2NO									2	0		16.00
Contact Blocks, 3NO									3	0		24.00
Contact Blocks, 1NC									0	1		8.00
Contact Blocks, 2NC									0	2		16.00
Contact Blocks, 3NC									0	3		24.00
Contact Blocks, 1NO+1NC									1	1		16.00
Contact Blocks, 2NO+1NC									2	1		24.00
Contact Blocks, 1NO+2NC									1	2		24.00
Contact Blocks, 1NO, Gold									1	0	G	16.00
Contact Blocks, 2NO, Gold									2	0	G	32.00
Contact Blocks, 3NO, Gold									3	0	G	48.00
Contact Blocks, 1NC, Gold									0	1	G	16.00
Contact Blocks, 2NC, Gold									0	2	G	32.00
Contact Blocks, 3NC, Gold									0	3	G	48.00
Contact Blocks, 1NO+1NC, Gold									1	1	G	32.00
Contact Blocks, 2NO+1NC, Gold									2	1	G	48.00
Contact Blocks, 1NO+2NC, Gold									1	2	G	48.00
5 Block Holder											5	4.00
30mm Black Plastic Adaptor Ring ①	G			1								8.00
30mm Chrome Metal Adaptor Ring ①	G			2								10.00

See catalog number explanation on page 8.56.

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

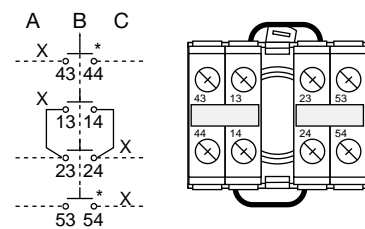
O = not actuated (normal state)
X = actuated (changed state)

3 Position switch

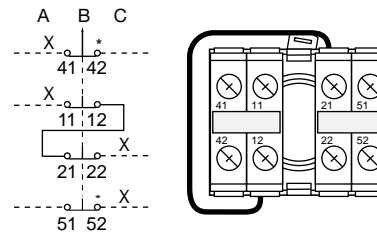
Handle position	Left block	Right block
A	O	X
B	O	O
C	X	O

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

Center position connection detail



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

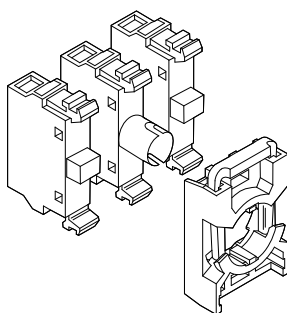
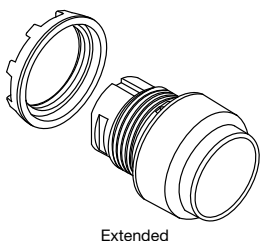
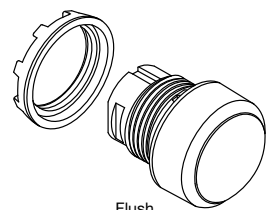


* Contacts may be N.O. or N.C.

① For 30mm devices, use Discount Schedule CC.

Press to test pilot lights

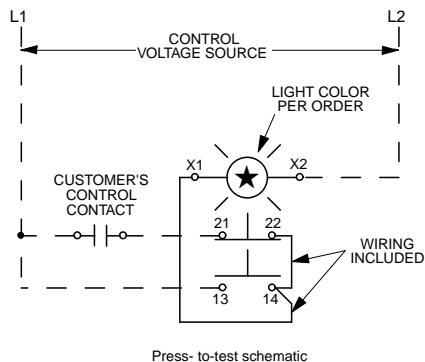
Press to test pilot lights ③



Options	Catalog number characters								List price	
Momentary, Flush				M	P	1	-			\$ 6.10
Momentary, Extended				M	P	3	-			6.10
Bezel, Black Plastic with Holder, 1/1 Contacts							-	KL		18.00
Bezel, Chrome Metal with Holder, 1/1 Contacts							-	ML		18.00
Illuminated without Lamp Block									PT	—
Full Voltage Lamp Block, (select Filament bulb or LED from below)									FPT	17.50
Resistor Lamp Block, (select 120V or 240V bulb or LED only)									RPT	21.50
Filament Bulb 6V									6	6.00
Filament Bulb 12V									7	6.00
Filament Bulb 24V									8	6.00
Filament Bulb 48V									9	6.00
Filament Bulb 120V									1	6.00
LED, 12VDC									L7	21.00
LED, 24VAC/DC									L8	15.00
LED, 48VAC/DC									L9	15.00
LED, 60VAC/DC									L60	21.00
LED, 120V AC									L1	15.00
LED, 120 V AC/DC									L13	21.00
LED, 240 V AC									L2	21.00
Transformer + Lamp Block 110-127/6VBulb									TPT1	58.50
Transformer + Lamp Block 220-240/6VBulb									TPT2	58.50
Transformer + Lamp Block 380-420/6VBulb									TPT3	58.50
Transformer + Lamp Block 440-480/6VBulb									TPT4	58.50
Transformer + Lamp Block 500-600/6VBulb									TPT5	58.50
Transformer + Lamp Block 110-127/24VBulb									TPT6	58.50
Transformer + Lamp Block 220-240/24VBulb									TPT7	58.50
Transformer + Lamp Block 380-420/24VBulb									TPT8	58.50
Transformer + Lamp Block 440-480/24VBulb									TPT9	58.50
Transformer + Lamp Block 110-127/24VLED									TPTL1	67.50
Transformer + Lamp Block 220-240/24VLED									TPTL2	67.50
Transformer + Lamp Block 380-420/24VLED									TPTL3	67.50
Transformer + Lamp Block 440-480/24VLED									TPTL4	67.50
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 ②	G		1							8.00
30mm Chrome Metal Adaptor Ring ②	G		2							10.00

See catalog number explanation on page 8.56.

Schematic



① No filament bulb, LED or transformer block can be combined with "illuminated without lamp block" selection.

② For 30mm devices, use Discount Schedule C.C.

③ 1 NO & 1NC contact blocks included.

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

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 **B**uzzer
KT **P**otentiometer
TS **T**oggle **S**witch

Button color:
R = Red
G = Green
Y = Yellow
L = Blue
W = White
B = **B**lack (non-illuminated only)
C = Clear
U = **G**rey (non-illuminated only)

Lens color for double push-buttons
R = Red
G = Green
Y = Yellow
C = Clear
B = **B**lack (non-illuminated only)
 -

Example 3: Type **M2SSK1-101**

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

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

Buzzer, contact blocks, lamp blocks

Example 4: Type **MCBH-10**

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

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

M = "Generation" M, Modular Range

Color selection according to IEC 60204-1

IEC 60204-1 specifies coding principles for indicators and actuators and gives recommendation regarding the use of colors. An excerpt from the standard is given below. For detailed information, see the standard.

Meaning of colors - General principles

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

8 Non-illuminated actuators

Emergency actuators

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

STOP / OFF actuators

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

START / ON actuators

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

Use of WHITE and BLACK for specific meanings

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

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

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

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

RESET actuators

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



Compact range

22mm



8

22mm Compact range

The compact range is a new competitive choice for customers with high requirements of cost efficient, easy to use and reliable products.

General construction

- "All-in-one function"
- One Ref. code = one complete function
- Easy mounting
- Less inventory
- Broad range of accessories
- Same front design as for the modular range.
- Durable actuators in clear colors with large text and push area
- Marked push areas available
- UL File# E57057
- CSA File# LR19700

Technical advantages

- High degree of protection:
UL Type 1, 3R, 4, 4X, 12 & 13
- One or two built-in electrically separated contacts (1NO, 1NC, 2NO, 2NC or 1NC & 1NO)
- Contacts with wiping action
- Low built-in depth

Operators

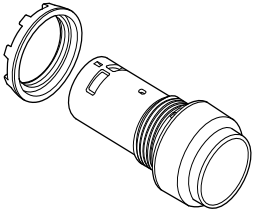
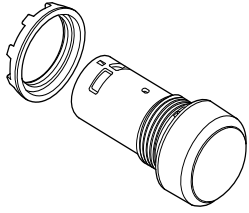
- Pushbuttons, non-illuminated
- Emergency stop pushbuttons, non-illuminated, twist, pull or key release
- Selector switches, non-illuminated, 2 or 3 position

Pilot lights

- Ba 9s base for bulbs (6-130 V) or LED (12-130 V DC, 24-230 V AC)
- Pilot light with integrated LED (12-220 V DC, 24-230 V AC)



Flush and extended pushbuttons Non-illuminated



Bezel in black plastic as standard
Bezel in metal:

Replace '1' in the:
Catalog No. CP#10Δ-...
Ref. Code 1SFA619XXX R 1XXX
3 for metal bezel

Codes for button colors

	Catalog No.	Ref. Code
		‡
Red	R	1
Green	G	2
Yellow	Y	3
Blue	L	4
White	W	5
Black	B	6
Grey	U	7

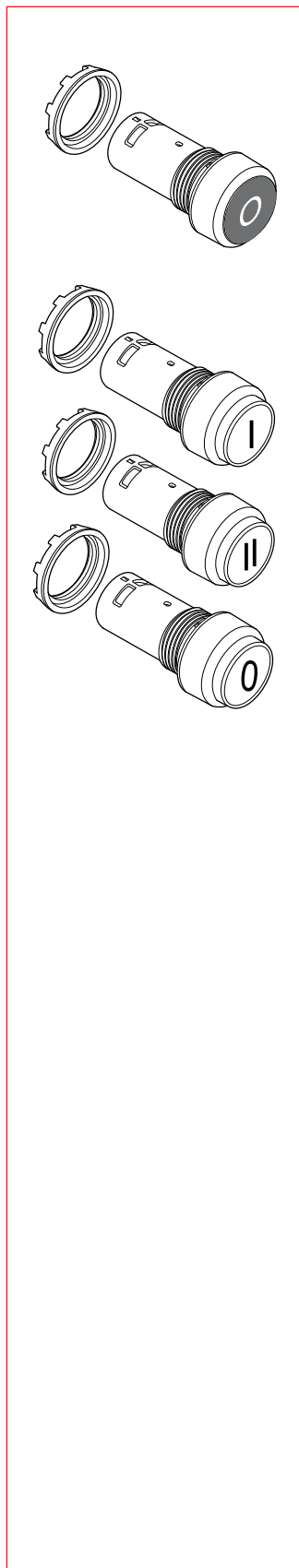
Pushbutton with ...

Description	Catalog No.	Ref. Code	List Price
Flush button			
Momentary			
<u>Contacts included:</u>			
1 NO	CP110 -10	1SFA 619 100 R101‡	\$ 15.20
2 NO	CP110 -20	1SFA 619 100 R102‡	19.90
1 NC	CP110 -01	1SFA 619 100 R104‡	15.20
2 NC	CP110 -02	1SFA 619 100 R105‡	19.90
1 NO +1 NC	CP110 -11	1SFA 619 100 R107‡	19.90
Maintained			
<u>Contacts included:</u>			
1 NO	CP210 -10	1SFA 619 101 R101‡	19.90
2 NO	CP210 -20	1SFA 619 101 R102‡	22.50
1 NC	CP210 -01	1SFA 619 101 R104‡	19.90
2 NC	CP210 -02	1SFA 619 101 R105‡	22.50
1 NO +1 NC	CP210 -11	1SFA 619 101 R107‡	22.50
Extended button			
Momentary			
<u>Contacts included:</u>			
1 NO	CP310 -10	1SFA 619 102 R101‡	15.20
2 NO	CP310 -20	1SFA 619 102 R102‡	19.90
1 NC	CP310 -01	1SFA 619 102 R104‡	15.20
2 NC	CP310 -02	1SFA 619 102 R105‡	19.90
1 NO +1 NC	CP310 -11	1SFA 619 102 R107‡	19.90
Maintained			
<u>Contacts included:</u>			
1 NO	CP410 -10	1SFA 619 103 R101‡	19.90
2 NO	CP410 -20	1SFA 619 103 R102‡	22.50
1 NC	CP410 -01	1SFA 619 103 R104‡	19.90
2 NC	CP410 -02	1SFA 619 103 R105‡	22.50
1 NO +1 NC	CP410 -11	1SFA 619 103 R107‡	22.50

Marked pushbuttons

Marked on push area, non-illuminated
Momentary

Pilot Devices
Compact range
22mm

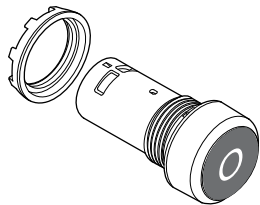


Legend	Button description ①	Contacts	Catalog Number	Reference. Code	List Price
	white, flush	1NO	CP1110W-10	1SFA619110R1015	\$ 16.70
	white, flush	1NO	CP1210W-10	1SFA619120R1015	16.70
	red, flush	1NC	CP1310R-01	1SFA619130R1041	16.70
	black, extended	1NC	CP3310B-01	1SFA619132R1046	16.70
	green, flush	1NO + 1NC	CP9-1007	1SFA619199R1007	21.00
	green, flush	2NO	CP9-1008	1SFA619199R1008	21.00
	grey, flush	1NO + 1NC	CP9-1025	1SFA619199R1025	21.00
	red, flush	1NO + 1NC	CP9-1009	1SFA619199R1009	21.00
	red, flush	2NO	CP9-1010	1SFA619199R1010	21.00
	red, extended	1NO + 1NC	CP9-1018	1SFA619199R1018	21.00
	green, flush	1NO + 1NC	CP9-1033	1SFA619199R1033	21.00
	red, flush	1NO + 1NC	CP9-1034	1SFA619199R1034	21.00
	blue, flush	1NO + 1NC	CP9-1021	1SFA619199R1021	21.00
	black, flush	1NO + 1NC	CP9-1015	1SFA619199R1015	21.00

① Black bezel available only.

Marked pushbuttons

Marked on push area, non-illuminated
Momentary



Legend	Button description ①	Contacts	Catalog Number	Reference. Code	List Price
	black, extended	1NO + 1NC	CP9-1017	1SFA619199R1017	\$ 21.00
	black, flush	1NO + 1NC	CP9-1016	1SFA619199R1016	21.00
	black, flush	2NO	CP9-1032	1SFA619199R1032	21.00
	white, flush	1NO	CP9-1022	1SFA619199R1022	16.70
	white, flush	1NO + 1NC	CP9-1005	1SFA619199R1005	21.00
	white, flush	2NO	CP9-1006	1SFA619199R1006	21.00
	green, flush	1NO + 1NC	CP9-1019	1SFA619199R1019	21.00
	black, flush	1NO + 1NC	CP9-1020	1SFA619199R1020	21.00
	white, flush	1NO	CP9-1024	1SFA619199R1024	16.70
	black, flush	2NO	CP9-1023	1SFA619199R1023	21.00
	black, flush	1NO + 1NC	CP9-1045	1SFA619199R1045	21.00
	black, flush	1NO + 1NC	CP9-1046	1SFA619199R1046	21.00
	black, flush	1NO + 1NC	CP9-1047	1SFA619199R1047	21.00
	black, flush	1NO + 1NC	CP9-1048	1SFA619199R1048	21.00

① Black bezel available only.

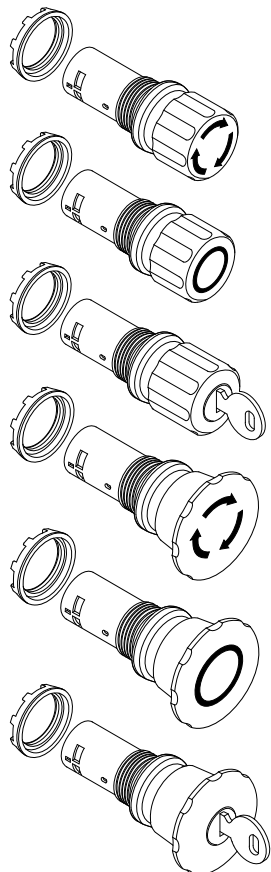
Emergency stop pushbuttons

Non-illuminated

Pilot Devices
Compact range
22mm

Fulfills IEC 60947-5-5

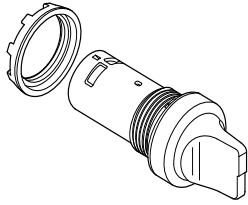
Plastic operator



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

Description	Color	Catalog No.	Ref. Code	List Price
Ø 30 mm				
Twist release				
<u>Contacts included:</u>				
1 NC	Red	CE3T-10R-01	1SFA 619 500 R1041	\$ 28.00
2 NO	Red	CE3T-10R-20	1SFA 619 500 R1021	33.60
2 NC	Red	CE3T-10R-02	1SFA 619 500 R1051	33.60
1 NO +1 NC	Red	CE3T-10R-11	1SFA 619 500 R1071	33.60
1 NO +1 NC	Black	CE3T-10B-11	1SFA 619 500 R1076	33.60
Pull release				
<u>Contacts included:</u>				
2 NC	Red	CE3P-10R-02	1SFA 619 501 R1051	33.60
1 NO +1 NC	Red	CE3P-10R-11	1SFA 619 501 R1071	33.60
1 NO +1 NC	Black	CE3P-10B-11	1SFA 619 501 R1076	33.60
Key release (Key code 71, Ronis 455)				
<u>Contacts included:</u>				
2 NC	Red	CE3K1-10R-02	1SFA 619 502 R1051	53.40
1 NO +1 NC	Red	CE3K1-10R-11	1SFA 619 502 R1071	53.40
1 NO +1 NC	Black	CE3K1-10B-11	1SFA 619 502 R1076	53.40
Ø 40 mm				
Twist release				
<u>Contacts included:</u>				
1 NC	Red	CE4T-10R-01	1SFA 619 550 R1041	30.80
2 NO	Red	CE4T-10R-20	1SFA 619 550 R1021	36.40
2 NC	Red	CE4T-10R-02	1SFA 619 550 R1051	36.40
1 NO +1 NC	Red	CE4T-10R-11	1SFA 619 550 R1071	36.40
1 NO & 1 NC	Black	CE4T-10B-11	1SFA 619 550 R1076	36.40
Pull release				
<u>Contacts included:</u>				
2 NC	Red	CE4P-10R-02	1SFA 619 551 R1051	36.40
1 NO +1 NC	Red	CE4P-10R-11	1SFA 619 551 R1071	36.40
1 NO +1 NC	Black	CE4P-10B-11	1SFA 619 551 R1076	36.40
Key release (Key code 71, Ronis 455)				
<u>Contacts included:</u>				
2 NC	Red	CE4K1-10R-02	1SFA 619 552 R1051	57.50
1 NO +1 NC	Red	CE4K1-10R-11	1SFA 619 552 R1071	57.50
1 NO +1 NC	Black	CE4K1-10B-11	1SFA 619 552 R1076	57.50
"EMO" Marking				
Twist release				
<u>Contacts included:</u>				
2 NC	Red	CE9-1003	1SFA 619 599 R1003	36.40
Pull release				
<u>Contacts included:</u>				
2 NC	Red	CE9-1004	1SFA 619 599 R1004	36.40

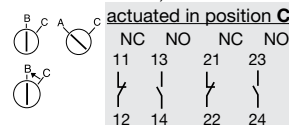
2 and 3 position selector switches Non-illuminated



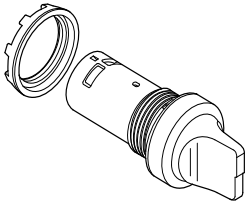
Contacts actuated

Two position selector switch

Contacts included,



	NC	NO	NC	NO
1NO	-	1	-	-
2NO	-	1	-	1
1NC	1	-	-	-
2NC	1	-	1	-
1NO + 1NC	-	1	1	-



Bezel in black plastic as standard

Bezel in metal:

Replace '1' in the:

Catalog No. C#SS#10Δ-...

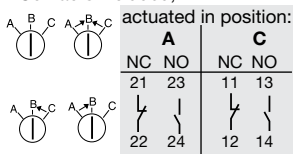
Ref. Code 1SFA619XXX R 1XXX

3 for metal bezel

Contacts actuated

Three position selector switch

Contacts included,



	A		C	
	NC	NO	NC	NO
2NO	-	1	-	1
2NC	1	-	1	-
1NO + 1NC	1	-	-	1

Codes for handle colors

	Catalog No.	Ref. Code
Red	R	1
Black	B	6
Grey	U	7

Selector switch with ...

Description	Catalog No.	Ref. Code	List Price
-------------	-------------	-----------	------------

Short handle. Two positions

Maintained

Contacts included:

1 NO	C2SS110 -10	1SFA 619 200 R101‡	\$ 22.70
2 NO	C2SS110 -20	1SFA 619 200 R102‡	27.20
1 NC	C2SS110 -01	1SFA 619 200 R104‡	22.70
2 NC	C2SS110 -02	1SFA 619 200 R105‡	27.20
1 NO + 1 NC	C2SS110 -11	1SFA 619 200 R107‡	27.20

Maintained

Contacts included:

1 NO	C2SS210 -10	1SFA 619 201 R101‡	22.70
2 NO	C2SS210 -20	1SFA 619 201 R102‡	27.20
1 NC	C2SS210 -01	1SFA 619 201 R104‡	22.70
2 NC	C2SS210 -02	1SFA 619 201 R105‡	27.20
1 NO + 1 NC	C2SS210 -11	1SFA 619 201 R107‡	27.20

Momentary

Contacts included:

1 NO	C2SS310 -10	1SFA 619 202 R101‡	22.70
2 NO	C2SS310 -20	1SFA 619 202 R102‡	27.20
1 NC	C2SS310 -01	1SFA 619 202 R104‡	22.70
2 NC	C2SS310 -02	1SFA 619 202 R105‡	27.20
1 NO + 1 NC	C2SS310 -11	1SFA 619 202 R107‡	27.20

Short handle. Three positions

Maintained

Contacts included:

2 NO	C3SS110 -20	1SFA 619 210 R102‡	27.20
2 NC	C3SS110 -02	1SFA 619 210 R105‡	27.20
1 NO + 1 NC	C3SS110 -11	1SFA 619 210 R107‡	27.20

Momentary

Contacts included:

2 NO	C3SS210 -20	1SFA 619 211 R102‡	27.20
2 NC	C3SS210 -02	1SFA 619 211 R105‡	27.20
1 NO + 1 NC	C3SS210 -11	1SFA 619 211 R107‡	27.20

Momentary

Contacts included:

2 NO	C3SS310 -20	1SFA 619 212 R102‡	27.20
2 NC	C3SS310 -02	1SFA 619 212 R105‡	27.20
1 NO + 1 NC	C3SS310 -11	1SFA 619 212 R107‡	27.20

Momentary

Contacts included:

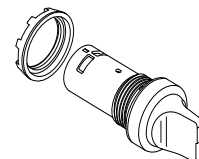
2 NO	C3SS710 -20	1SFA 619 216 R102‡	27.20
2 NC	C3SS710 -02	1SFA 619 216 R105‡	27.20
1 NO + 1 NC	C3SS710 -11	1SFA 619 216 R107‡	27.20

Ordering example – Compact selector switch

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

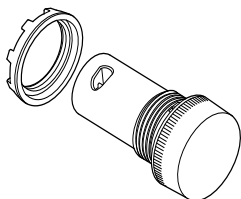
Ref.: 10 pieces of C3SS7-10R-02

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



Pilot lights

Pilot Devices
Compact range
22mm



Pilot light Ba 9s base, bulb not included

Description	Catalog No.	Ref. Code	List Price
Color:			
Red	CL-100R	1SFA 619 402 R1001	\$ 14.00
Green	CL-100G	1SFA 619 402 R1002	
Yellow	CL-100Y	1SFA 619 402 R1003	
Blue	CL-100L	1SFA 619 402 R1004	
White	CL-100W	1SFA 619 402 R1005	
Clear	CL-100C	1SFA 619 402 R1008	

Pilot light with integrated LED Service life >50 000 hours

Color	Rated current mA	Luminance mcd	Wave-length nm	Catalog No.	Ref. Code	List Price
Rated voltage 12 V, DC ①						
Red	30	60	625	CL-501R	1SFA 619 402 R5011	\$ 25.00
Green	15	126	520	CL-501G	1SFA 619 402 R5012	
Yellow	30	60	590	CL-501Y	1SFA 619 402 R5013	
Blue	30	22	470	CL-501L	1SFA 619 402 R5014	
White	30	88	②	CL-501W	1SFA 619 402 R5015	
Rated voltage 24 V, AC/DC						
Red	15	60	625	CL-502R	1SFA 619 402 R5021	25.00
Green	15	126	520	CL-502G	1SFA 619 402 R5022	
Yellow	15	60	590	CL-502Y	1SFA 619 402 R5023	
Blue	15	22	470	CL-502L	1SFA 619 402 R5024	
White	15	88	②	CL-502W	1SFA 619 402 R5025	
Rated voltage 48 V, AC/DC						
Red	15	60	625	CL-504R	1SFA 619 402 R5041	25.00
Green	15	126	520	CL-504G	1SFA 619 402 R5042	
Yellow	15	60	590	CL-504Y	1SFA 619 402 R5043	
Blue	15	22	470	CL-504L	1SFA 619 402 R5044	
White	15	88	②	CL-504W	1SFA 619 402 R5045	
Rated voltage 60 V, AC/DC						
Red	15	60	625	CL-505R	1SFA 619 402 R5051	25.00
Green	15	126	520	CL-505G	1SFA 619 402 R5052	
Yellow	15	60	590	CL-505Y	1SFA 619 402 R5053	
Blue	15	22	470	CL-505L	1SFA 619 402 R5054	
White	15	88	②	CL-505W	1SFA 619 402 R5055	
Rated voltage 110-130 V, AC						
Red	15	60	625	CL-513R	1SFA 619 402 R5131	25.00
Green	15	126	520	CL-513G	1SFA 619 402 R5132	
Yellow	15	60	590	CL-513Y	1SFA 619 402 R5133	
Blue	15	22	470	CL-513L	1SFA 619 402 R5134	
White	15	88	②	CL-513W	1SFA 619 402 R5135	
Rated voltage 110-130 V, DC ①						
Red	15	60	625	CL-515R	1SFA 619 402 R5151	25.00
Green	15	126	520	CL-515G	1SFA 619 402 R5152	
Yellow	15	60	590	CL-515Y	1SFA 619 402 R5153	
Blue	15	22	470	CL-515L	1SFA 619 402 R5154	
White	15	88	②	CL-515W	1SFA 619 402 R5155	
Rated voltage 220 V, DC ①						
Red	15	60	625	CL-520R	1SFA 619 402 R5201	25.00
Green	15	126	520	CL-520G	1SFA 619 402 R5202	
Yellow	15	60	590	CL-520Y	1SFA 619 402 R5203	
Blue	15	22	470	CL-520L	1SFA 619 402 R5204	
White	15	88	②	CL-520W	1SFA 619 402 R5205	
Rated voltage 230 V, AC						
Red	15	60	625	CL-523R	1SFA 619 402 R5231	25.00
Green	15	126	520	CL-523G	1SFA 619 402 R5232	
Yellow	15	60	590	CL-523Y	1SFA 619 402 R5233	
Blue	15	22	470	CL-523L	1SFA 619 402 R5234	
White	15	88	②	CL-523W	1SFA 619 402 R5235	
Rated voltage 380 V, AC						
Red	15	60	625	CL-530R	1SFA 619 402 R5301	25.00
Green	15	126	520	CL-530G	1SFA 619 402 R5302	
Yellow	15	60	590	CL-530Y	1SFA 619 402 R5303	
Blue	15	22	470	CL-530L	1SFA 619 402 R5304	
White	15	88	②	CL-530W	1SFA 619 402 R5305	
Rated voltage 415 V, AC						
Red	15	60	625	CL-541R	1SFA 619 402 R5411	25.00
Green	15	126	520	CL-541G	1SFA 619 402 R5412	
Yellow	15	60	590	CL-541Y	1SFA 619 402 R5413	
Blue	15	22	470	CL-541L	1SFA 619 402 R5414	
White	15	88	②	CL-541W	1SFA 619 402 R5415	

① Care should be taken for DC supply where + and - must be correctly connected. (this is marked on the product, X1 (+) and X2 (-)).

② X=0.31, Y=0.32

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

Accessories



Filament bulbs Ba 9s base Catalog No. of current: AC/DC. A lamp changing tool is required for changing bulb.

Description					Catalog No.	Ref. Code	List Price
Rated voltage V	Rated current mA	Rated output W	Service life h	Luminance mcd			
6	200	1.2	10 000	350	5911 086-11	5911 086-11	\$ 6.00
12	100	1.2	10 000	230	5911 086-12	5911 086-12	
24	50	1.2	10 000	280	5911 086-13	5911 086-13	
30	40	1.2	10 000	250	5911 086-4	5911 086-4	
48	42	2	6 000	500	5911 086-5	5911 086-5	
60	20	1.2	5 000	190	5911 086-14	5911 086-14	
110	18	2	7 500	250	5911 086-7	5911 086-7	
130	15	2	7 500	120	5911 086-15	5911 086-15	

LEDs

With one diode chip mounted on a Ba 9s base. Choose the same color for the LED and the lamp cap or else use a clear lamp cap.

For white light use white LED with clear lamp cap. At DC the lamp base have to be connected to cathode (-) and the bottom contact to anode (+).

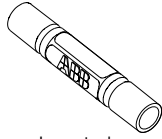


Color	Rated current mA	Wave-length nM	Luminance mcd	Catalog No.	Ref. Code	List Price
Rated voltage 12 V, DC Service life >50 000 h						
Red	15	630	250	KA2-2011	1SFA 616 921 R2011	\$ 21.00
Green	15	525	1000	KA2-2012	1SFA 616 921 R2012	
Yellow	15	592	250	KA2-2013	1SFA 616 921 R2013	
Blue	15	470	450	KA2-2014	1SFA 616 921 R2014	
White	15	x=0.31 y=0.32	600	KA2-2015	1SFA 616 921 R2015	
Rated voltage 24 V, (AC)/DC Service life >50 000 h						
Red	15	630	250	KA2-2021	1SFA 616 921 R2021	15.00
Green	15	525	800	KA2-2022	1SFA 616 921 R2022	
Yellow	15	592	250	KA2-2023	1SFA 616 921 R2023	
Blue	15	470	400	KA2-2024	1SFA 616 921 R2024	
White	15	x=0.31 y=0.32	500	KA2-2025	1SFA 616 921 R2025	
Rated voltage 48 V, (AC)/DC Service life >50 000 h						
Red	12	630	200	KA2-2041	1SFA 616 921 R2041	15.00
Green	12	525	1700	KA2-2042	1SFA 616 921 R2042	
Yellow	12	592	240	KA2-2043	1SFA 616 921 R2043	
Blue	12	470	720	KA2-2044	1SFA 616 921 R2044	
White	12	x=0.31 y=0.32	1200	KA2-2045	1SFA 616 921 R2045	
Rated voltage 60 V, (AC)/DC Service life >50 000 h						
Red	10	630	160	KA2-2051	1SFA 616 921 R2051	21.00
Green	10	525	1400	KA2-2052	1SFA 616 921 R2052	
Yellow	10	592	200	KA2-2053	1SFA 616 921 R2053	
Blue	10	470	600	KA2-2054	1SFA 616 921 R2054	
White	10	x=0.31 y=0.32	1000	KA2-2055	1SFA 616 921 R2055	
Rated voltage 110-130 V, AC Service life 25 000 h						
Red	4-6	630	60-100	KA2-2131	1SFA 616 921 R2131	15.00
Green	4-6	525	500-850	KA2-2132	1SFA 616 921 R2132	
Yellow	4-6	592	70-120	KA2-2133	1SFA 616 921 R2133	
Blue	4-6	470	220-350	KA2-2134	1SFA 616 921 R2134	
White	4-6	x=0.31 y=0.32	350-600	KA2-2135	1SFA 616 921 R2135	
Rated voltage 110-130 V, AC/DC Service life 25 000 h						
Red	4-6	630	60-100	KA2-2141	1SFA 616 921 R2141	21.00
Green	4-6	525	500-850	KA2-2142	1SFA 616 921 R2142	
Yellow	4-6	592	70-120	KA2-2143	1SFA 616 921 R2143	
Blue	4-6	470	220-350	KA2-2144	1SFA 616 921 R2144	
White	4-6	x=0.31 y=0.32	350-600	KA2-2145	1SFA 616 921 R2145	
Rated voltage 230 V, AC Service life 25 000 h						
Red	4	630	60	KA2-2221	1SFA 616 921 R2221	21.00
Green	4	525	500	KA2-2222	1SFA 616 921 R2222	
Yellow	4	592	70	KA2-2223	1SFA 616 921 R2223	
Blue	4	470	220	KA2-2224	1SFA 616 921 R2224	
White	4	x=0.31 y=0.32	350	KA2-2225	1SFA 616 921 R2225	

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

Accessories

Pilot Devices
Compact range
22mm



Lamp tool



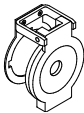
Mounting tool



Silicone boot



Protective ring



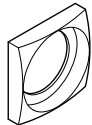
Protective cover



Pushbutton lens



Bezel



Square bezel

Lamp changing tool

Description	Catalog No.	Ref. Code	List Price
For LEDs and for bulbs	KA1-8072	1SFA 616 920 R8072	\$ 10.00

Mounting tool

Description	Catalog No.	Ref. Code	List Price
Used for tightening the locking nut	KA1-8015	1SFA 611 920 R8015	\$ 10.00

Silicone boot

Of transparent, heat and cold resistant silicon rubber. Does not harden at low temperature. Gives IP 67 degree of protection. When membrane is used, remove the gasket.

For operator with	Catalog No.	Ref. Code	List Price
Flush button	KA1-8052	1SFA 616 920 R8052	\$ 8.00
Extended button	KA1-8002	1SFA 616 920 R8002	8.00

Protective ring

Description	Catalog No.	Ref. Code	List Price
For flush and extended pushbutton To prevent inadvertant operation. Not together with legend plate holder.	SK615512-1	SK 615 512-1	\$ 4.00

Protective cover

Description	Catalog No.	Ref. Code	List Price
For flush button. To prevent inadvertant operation. Not together with legend plate holder.	KA1-8010	1SFA 616 920 R8010	\$ 15.00

Button ①

Description	Catalog No.	Ref. Code	List Price
Grey, flush (Packing unit 10 pieces)	KA1-8087	1SFA 616 920 R8087	\$ 1.50
Grey, extended (Packing unit 10 pieces)	KA1-8097	1SFA 616 920 R8097	1.50

Bezel

Description	Catalog No.	Ref. Code	List Price
For pushbutton			
Grey (Packing unit 10 pieces)	KA1-8079	1SFA 616 920 R8079	\$ 1.00
Black (Packing unit 10 pieces)	KA1-8022	1SFA 616 920 R8022	1.00
Metal (Packing unit 10 pieces)	KA1-8021	1SFA 616 920 R8021	2.50
For selector switch			
Grey (Packing unit 10 pieces)	KA1-8077	1SFA 619 920 R8076	1.00
Black (Packing unit 10 pieces)	KA1-8080	1SFA 619 920 R8077	1.00
Metal (Packing unit 10 pieces)	KA1-8024	1SFA 619 920 R8078	2.50

Square bezel

Black, plastic (Packing unit 10 pieces)	SK 616 016-2	SK 616 016-2	2.00
Grey, plastic (Packing unit 10 pieces)	KA1-8124	1SFA 611 920 R8124	2.00

Blanking plug (22mm)

Description	Catalog No.	Ref. Code	List Price
Grey plastic	MA1-8129	1SFA 611 920 R8129	\$ 5.80
Black plastic	MA1-8130	1SFA 611 920 R8130	5.80

Blanking plug (30mm)

Description	Catalog No.	Ref. Code	List Price
Black plastic	MA1-8133	1SFA 611 920 R8133	\$ 7.30

① For other colors, see Accessories in the Modular Section.

Accessories



30 mm adaptors

For use when fitting the 22 mm pilot devices in 30 mm mounting holes. (1.5 – 4 mm panels)

Description	Catalog No.	Ref. Code	List Price
For use with pushbuttons, selector switches, emergency stop push-button and pilot lights Black plastic.	KA1-8029	1SFA 616 920 R8029	\$ 8.00
	KA1-8030	1SFA 616 920 R8030	10.00



Adaptors

For flush mounted pushbutton	KA1-8073	1SFA 616 920 R8073	15.00
For flush mounted selector switches	CA1-8075	1SFA 619 920 R8075	



Extra key (packing unit, 2 pcs)

Description	Catalog No.	Ref. Code	List Price
Ronis 455 (key code 71)	SK 616 021-71	SK 616 021-71	\$ 10.00



Padlock attachment for 30mm mushroom head (twist release only)

Prevents unauthorized use of equipment. Provides space for up to 4 padlocks with the button in the depressed position. Holes fit standard 1/4" padlock.

Description	Catalog No.	List Price
Padlock attachment	SK 615 502-D	\$ 20.00



Approvals

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

For detail information please contact ABB

Standards

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

Degrees of protection

Pilot device	IP	UL/CSA
Compact pushbutton, CP1, CP2, CP3, CP4	IP66, 67, 69K	Type 1, 3R, 4, 4X, 12, 13
Compact selector switch, C2SS, C3SS		
Compact pilot light, CL		
Compact emergency stop pushbutton, CE3T, CE3P, CE4T, CE4P, CE3K1, CE4K1		
Enclosures CEP	IP66, 67, 69K	Type 1, 3R, 4, 4X, 12, 13
Terminals	IP20	

Temperature

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

Tightening torque

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

Contacts

Self-cleaning contacts of silver-coated brass

Ratings as per UL, CSA, NEMA	AC C300	DC R300
Rated insulation voltage	250 V	250 V
Rated thermal current	2.5 A	1 A
Rated operational current		
at 120 V	1.5 A	0.22 A
125 V		
240 V	0.75 A	0.11 A
250 V		
Ratings as per IEC 60947-5-1		
Rated insulation voltage, U_i	300 V	
Rated thermal current, I_{th}	5 A	
Rated operational current, I_o		
utilisation category AC-15		
at 120 V	1.5 A	
240 V	1 A	
Rated operational current, I_o , utilisation category DC-13,		
at 24 V	0.3 A	
125 V	0.2 A	
Short circuit protection		
Max. fuse at 1 kA	16 A ordinary 10 A delayed	
Tightening torque		
compact pushbutton & selector switch	0.8 Nm (M3)	
compact pilot light	0.9 Nm (M3.5)	
compact emergency stop pushbutton	0.8 Nm (M3)	
Terminals		
Plus-minus Pozidriv No. 2		
Compact pushbutton		
Compact selector switch		
Compact emergency stop		
Connectable area	min. 1 x 0.5 mm ² /1 x AWG22 max. 2 x 1.5 mm ² /2 x AWG14	
Compact pilot light		
Connectable area	min. 1 x 0.5 mm ² /1 x AWG20 max. 2 x 2.5 mm ² /2 x AWG14	

Material – UV protection according to UL 746 (C)

No ozone depleting substances in the products.

All front parts are made of polycarbonate

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

Assembled Stations & enclosures

ABB Assembled stations & enclosures



8

Features

- Available for 1, 2, 3, 4 & 6 operators.
- Base mounted contacts allow for easy removal of operator cover. Wiring remains with base.
- Up to 5 contact blocks can be used per operator for some combinations.
- Environmental ratings: UL/CSA Type 1, 3R, 4, 4X, 12 & 13, IP66
- Available in high impact strength polycarbonate (plastic) material.
- Rated for outdoor use.
- Enclosures can withstand light acid solutions and other chemicals.
- Metallic NEMA 4X & 12 stainless steel enclosures available.

Plastic enclosures, empty

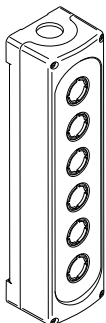
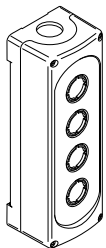
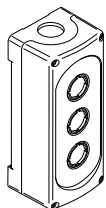
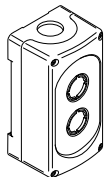
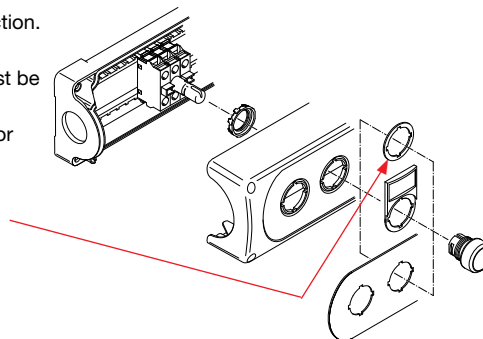
Modular range, 22mm

Empty plastic enclosures Now with stainless steel screws

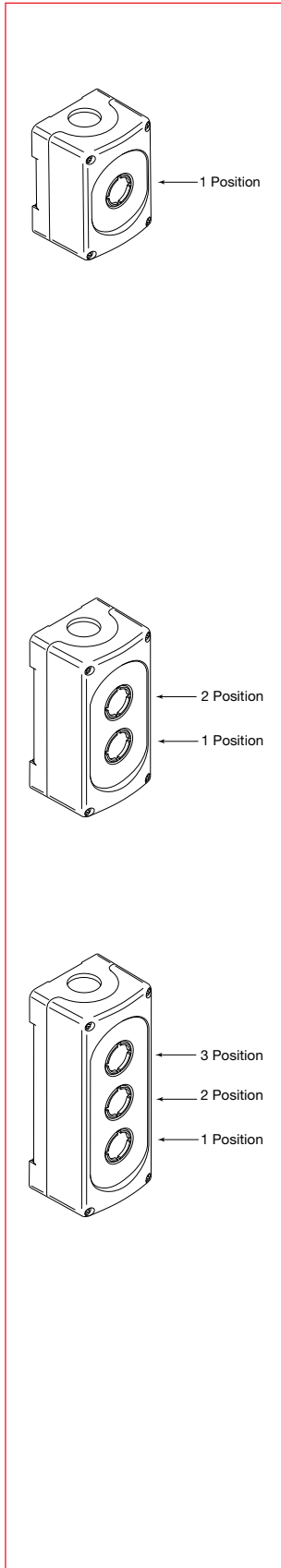
Size	Color top/bottom	Catalog No.	Ref. Code	List Price
1-seat	Dark grey/Light grey	MEP1-0	1SFA 611 811 R1000	\$ 28.00
1-seat	Yellow/Light grey	MEPY1-0	1SFA 611 821 R1000	28.00
2-seat	Dark grey/Light grey	MEP2-0	1SFA 611 812 R1000	32.00
3-seat	Dark grey/Light grey	MEP3-0	1SFA 611 813 R1000	36.00
4-seat	Dark grey/Light grey	MEP4-0	1SFA 611 814 R1000	44.00
6-seat	Dark grey/Light grey	MEP6-0	1SFA 611 816 R1000	52.00

When Ordering

- Select operators from 22mm Modular section.
- Selector switches with short handle for vertically mounted selector switches must be selected from pages 8.96 - 8.97
- Select contact blocks and lamp blocks for **rear** mounting, see pages 8.93 - 8.94
- Accessories, see page 8.94
- **One spacer per operator** has to be selected if legend plate is not used.



Plastic enclosures, assembled stations 1, 2 & 3 seat, 22mm Modular range



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

Description					Catalog No.	List Price
	Pos - 1	Pos - 2	Pos - 3	Pos - 4		
Type	Twist Release 40mm E	—	—	—	P1-ES	\$ 84.00
Color	Red	—	—	—		
Contacts	2 NC	—	—	—		
Name plate	EMERGENCY STOP	—	—	—		
Type	III. Twist Release 40mm E	—	—	—	P1-IES	107.50
Color	40mm E-Stop	—	—	—		
Contacts	Red, 120V filament	—	—	—		
Name plate	EMERGENCY STOP	—	—	—		

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

Description					Catalog No.	List Price
	Pos - 1	Pos - 2	Pos - 3	Pos - 4		
Type	3-pos sel. Main	—	—	—	P1-HOA	\$ 55.00
Color	Black	—	—	—		
Contacts	2 NO	—	—	—		
Name plate	HAND/OFF/AUTO	—	—	—		

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

Description					Catalog No.	List Price
	Pos - 1	Pos - 2	Pos - 3	Pos - 4		
Type	Button mom, Ext.	Button mom, Flush	—	—	P2-SS	\$ 63.20
Color	Red	Green	—	—		
Contacts	1 NC	1 NO	—	—		
Name plate	STOP	START	—	—		
Type	3-pos sel. Main	Pilot Light	—	—	P2-1HOARL	90.00
Color	Black	Red	—	—		
Contacts	2 NO	1 LB, 120V filament	—	—		
Name plate	HAND/OFF/AUTO	RUN	—	—		
Type	2-pos sel. Main	Pilot Light	—	—	P2-100RL	82.00
Color	Black	Red	—	—		
Contacts	1 NO	1 LB, 120V filament	—	—		
Name plate	ON/OFF	RUN	—	—		

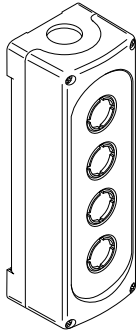
3-seat Plastic enclosure, dark grey top/light grey bottom

Description					Catalog No.	List Price
	Pos - 1	Pos - 2	Pos - 3	Pos - 4		
Type	Button mom, Ext.	Button mom, Flush	Pilot Light	—	P3-1SSRL	\$ 96.70
Color	Red	Green	Red	—		
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	123.50
Color	Black	Red	Green	—		
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	115.50
Color	Black	Red	Green	—		
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	109.60
Color	Black	Green	Red	—		
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	145.50
Color	Red	Black	Red	—		
Contacts	2 NC	2 NO	1 LB, 120V filament	—		
Name plate	EMERGENCY STOP	HAND/OFF/AUTO	RUN	—		
Type	5kOhm Pot	Stop	Start	—	MEP3-SSPOT5	140.00
Color	Black	Red	Green	—		
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

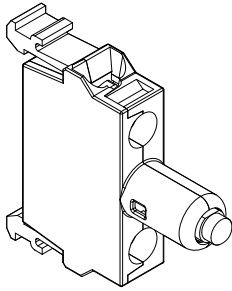
← 1 Position

Description					Catalog No.	List Price
	Pos - 1	Pos - 2	Pos - 3	Pos - 4		
Type	Button mom., Ext.	Button mom., Flush	Pilot Light	Pilot Light	P4-1SSRLGL	\$ 134.20
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	147.10
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	161.00
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	153.00
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	P4-1ESSSRL	156.20
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	183.00
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	175.00
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		

Accessories

Modular range

Pilot Devices
Stations &
Enclosures



Lamp blocks with integrated LEDs – for base mounting into enclosures

Description	Catalog No.	Ref. Code	List Price	
12V DC rated voltage				
Red	MLBL-00BR	1SFA611621R2001	\$ 25.50	
Green	MLBL-00BG	1SFA611621R2002		
Yellow	MLBL-00BY	1SFA611621R2003		
Blue	MLBL-00BL	1SFA611621R2004		
White	MLBL-00BW	1SFA611621R2005		
24V AC/DC rated voltage				
Red	MLBL-01BR	1SFA611621R2011		
Green	MLBL-01BG	1SFA611621R2012		
Yellow	MLBL-01BY	1SFA611621R2013		
Blue	MLBL-01BL	1SFA611621R2014		
White	MLBL-01BW	1SFA611621R2015		
48V AC/DC rated voltage				
Red	MLBL-02BR	1SFA611621R2021		
Green	MLBL-02BG	1SFA611621R2022		
Yellow	MLBL-02BY	1SFA611621R2023		
Blue	MLBL-02BL	1SFA611621R2024		
White	MLBL-02BW	1SFA611621R2025		
110-130V AC rated voltage				
Red	MLBL-04BR	1SFA611621R2041		
Green	MLBL-04BG	1SFA611621R2042		
Yellow	MLBL-04BY	1SFA611621R2043		
Blue	MLBL-04BL	1SFA611621R2044		
White	MLBL-04BW	1SFA611621R2045		
110-130V DC rated voltage				
Red	MLBL-05BR	1SFA611621R2051		
Green	MLBL-05BG	1SFA611621R2052		
Yellow	MLBL-05BY	1SFA611621R2053		
Blue	MLBL-05BL	1SFA611621R2054		
White	MLBL-05BW	1SFA611621R2055		
220V DC rated voltage				
Red	MLBL-06BR	1SFA611621R2061		
Green	MLBL-06BG	1SFA611621R2062		
Yellow	MLBL-06BY	1SFA611621R2063		
Blue	MLBL-06BL	1SFA611621R2064		
White	MLBL-06BW	1SFA611621R2065		
230V DC rated voltage				
Red	MLBL-07BR	1SFA611621R2071		
Green	MLBL-07BG	1SFA611621R2072		
Yellow	MLBL-07BY	1SFA611621R2073		
Blue	MLBL-07BL	1SFA611621R2074		
White	MLBL-07BW	1SFA611621R2075		

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Accessories Modular range

Contact blocks for rear mounting

Description	Catalog No.	Ref. Code	List Price
Contact blocks			
1NO	MCB-10B	1SFA 611 610 R2001	\$ 8.00
1NC	MCB-01B	1SFA 611 610 R2010	

Double contact block

2NO	MCB-20B	1SFA 611 610 R2002	16.00
2NC	MCB-02B	1SFA 611 610 R2020	
1NO+1NC	MCB-11B	1SFA 611 610 R2011	

Contact blocks with gold plated contacts

1NO	MCB-10BG	1SFA 611 610 R2101	16.00
1NC	MCB-01BG	1SFA 611 610 R2110	

Lamp blocks

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

115 V AC supply voltage.

For 60 V filament bulb max. 1.2 W

230 V AC supply voltage.

For 130 V filament bulb max. 2 W

	MLB-1B	1SFA 611 620 R2001	17.50
	MLB-2B	1SFA 611 620 R2002	21.50
	MLB-3B	1SFA 611 620 R2003	21.50

Protective sleeve

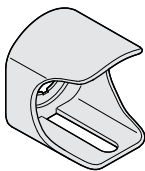
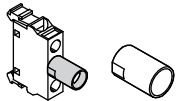
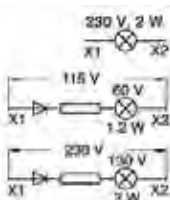
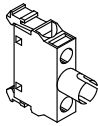
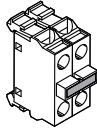
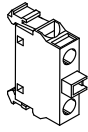
Description	Catalog No.	Ref. Code	List Price
To make a rear mounted lamp block screen protected. IP20	5396 0543-1	5396 0543-1	\$ 1.50

Earthing terminal

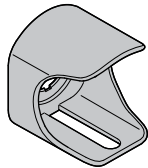
Description	Catalog No.	Ref. Code	List Price
For plastic enclosure.	MA5-3005	1SFA 611 925 R3005	\$ 2.00

Shrouds

Description	Catalog No.	Ref. Code	List Price
Yellow	MA1-8053	1SFA611920R8053	\$ 12.00
Gray	MA1-8128	1SFA611920R8128	

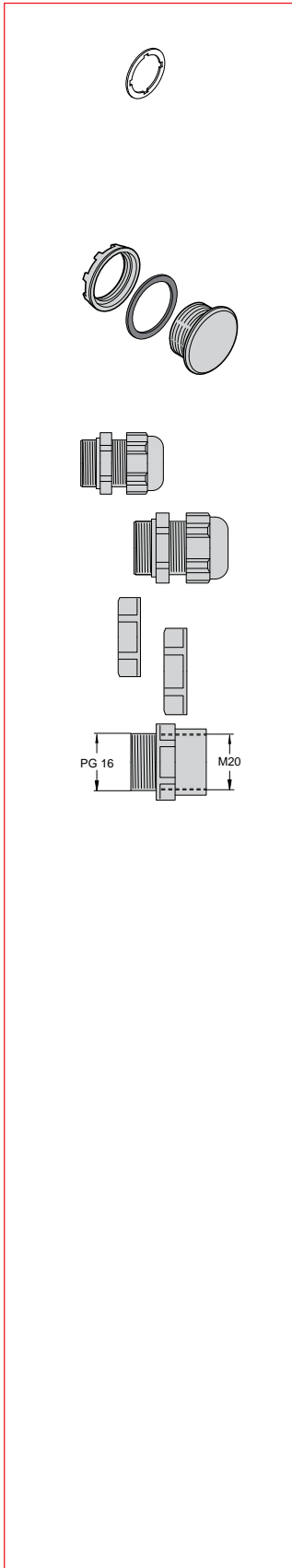


Yellow shroud



Gray shroud

Accessories



Spacer

Description	Catalog No.	Ref. Code	List Price
1 mm thick. Needed when legend plates are not used in plastic enclosures.			
Spacer (Packing unit 10 pieces)	SK 615 516-1	SK 615 516-1	\$ 1.00
Spacer for Modular emergency stop pushbutton (Packing unit 10 pieces)	KA1-8045	1SFA 616 920 R 8045	1.00

Blanking plug

Description	Catalog No.	Ref. Code	List Price
Grey plastic, 22mm	MA1-8129	1SFA 611 920 R8129	\$ 5.80
Black plastic, 22mm	MA1-8130	1SFA 611 920 R8130	5.80
Black plastic, 30mm	MA1-8133	1SFA 611 920 R8133	7.30

Cable gland

Description	Catalog No.	Ref. Code	List Price
PG 13.5	MA5-3006	1SFA 611 925 R3006	\$ 8.40
PG 16	MA5-3007	1SFA 611 925 R3007	9.40

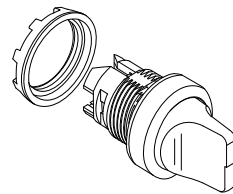
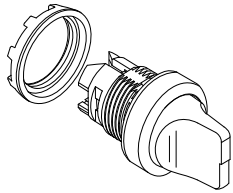
Nut

Description	Catalog No.	Ref. Code	List Price
PG 13.5	MA5-3008	1SFA 611 925 R3007	\$ 2.60
PG 16	MA5-3009	1SFA 611 925 R3009	2.60

Adaptor

Description	Catalog No.	Ref. Code	List Price
PG 16/M20	MA5-3010	1SFA 611 925 R3010	\$ 16.20

2 position selector switches for mounting in vertically mounted enclosures



Bezel in black plastic as standard

Bezel in metal:

Replace '1' in the:

Catalog No. M2SSX-1 0X

Ref. Code 1SFA611XXX R 1XXX

3 for metal bezel

4 for grey plastic bezel

Contact functions

Block positions as seen from operator front.

Handle position	Left block	Right block
A (B)	O	O
O	x	x

O = not actuated (normal state)

x = actuated (state changed)

Non-illuminated operator ... ①

Symbol	Handle color	Catalog No.	Ref. Code	List Price
with short handle				
Maintained				
	Red	M2SSV1-10R	1SFA 611 220 R1001	\$ 11.00
	Black	M2SSV1-10B	1SFA 611 220 R1006	
Maintained				
	Red	M2SSV2-10R	1SFA 611 221 R1001	11.00
	Black	M2SSV2-10B	1SFA 611 221 R1006	
Momentary, spring return from C to B				
	Red	M2SSV3-10R	1SFA 611 222 R1001	14.00
	Black	M2SSV3-10B	1SFA 611 222 R1006	

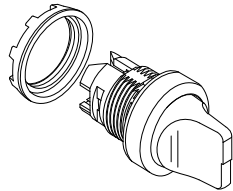
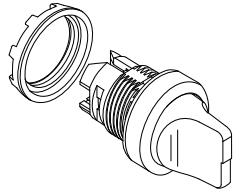
Illuminated operator ... ① ②

Symbol	Handle color	Catalog No.	Ref. Code	List Price
with short handle				
Maintained				
	Red	M2SSV1-11R	1SFA 611 220 R1101	\$ 17.00
	Green	M2SSV1-11G	1SFA 611 220 R1102	
	Yellow	M2SSV1-11Y	1SFA 611 220 R1103	
Maintained				
	Red	M2SSV2-11R	1SFA 611 221 R1101	17.00
	Green	M2SSV2-11G	1SFA 611 221 R1102	
	Yellow	M2SSV2-11Y	1SFA 611 221 R1103	
Momentary, spring return from C to B				
	Red	M2SSV3-11R	1SFA 611 222 R1101	26.00
	Green	M2SSV3-11G	1SFA 611 222 R1102	
	Yellow	M2SSV3-11Y	1SFA 611 222 R1103	

① No contact in center position. Reserved for lamp block.

② Lamp block for max 230 V AC/DC. Bulb not included. Other lamp block see Accessories

3 position selector switches for mounting in vertically mounted enclosures



Bezel in black plastic as standard
Bezel in metal:
Replace '1' in the:
Catalog No. M3SSX-1 0X
Ref. Code 1SFA611XXX R 1XXX
3 for metal bezel
4 for grey plastic bezel

Contact functions

Block positions as seen from operator front.

Handle position	Left block	Right block
A	x	O
B	O	O
C	O	x

Non-illuminated operator ... ①

Symbol	Handle color	Catalog No.	Ref. Code	List Price
with short handle				
Maintained				
	Red	M3SSV1-10R	1SFA 611 230 R1001	\$ 11.00
	Black	M3SSV1-10B	1SFA 611 230 R1006	
Momentary, spring return from A to B and from C to B				
	Red	M3SSV2-10R	1SFA 611 231 R1001	14.00
	Black	M3SSV2-10B	1SFA 611 231 R1006	
Momentary, spring return from C to B				
	Red	M3SSV3-10R	1SFA 611 232 R1001	14.00
	Black	M3SSV3-10B	1SFA 611 232 R1006	

Illuminated operator ... ① ②

Symbol	Handle color	Catalog No.	Ref. Code	List Price
with short handle				
Maintained				
	Red	M3SSV1-11R	1SFA 611 230 R1101	\$ 17.00
	Green	M3SSV1-11G	1SFA 611 230 R1102	
	Yellow	M3SSV1-11Y	1SFA 611 230 R1103	
Momentary, spring return from A to B and from C to B				
	Red	M3SSV2-11R	1SFA 611 231 R1101	26.00
	Green	M3SSV2-11G	1SFA 611 231 R1102	
	Yellow	M3SSV2-11Y	1SFA 611 231 R1103	
Momentary, spring return from C to B				
	Red	M3SSV3-11R	1SFA 611 232 R1001	26.00
	Green	M3SSV3-11G	1SFA 611 232 R1002	
	Yellow	M3SSV3-11Y	1SFA 611 232 R1003	

Contact blocks, lamp block and holder See Page 8.96

① No contact in center position. Reserved for lampblock.

② Lamp block for max 230 V AC/DC. Bulb not included. Other lamp block see Accessories

Compact E-Stop Component parts

1-seat emergency-stop enclosures

	Description	Catalog Number	Order Code	List Price
	Enclosure 1-Seat Dark grey/light grey 50D _{mm} x 65W _{mm} 65H _{mm}	CEP1-0	1SFA 619 811 R1000	\$ 22.00
	Enclosure 1-Seat Yellow/light grey 50D _{mm} x 65W _{mm} 65H _{mm}	CEPY1-0	1SFA 619 821 R1000	22.00
	Shroud For emergency stops; yellow 30D _{mm} x 45W _{mm} 60H _{mm}	CA1-8053	1SFA 619 920 R8053	10.00
	Shroud For machine stops; dark grey 30D _{mm} x 45W _{mm} 60H _{mm}	CA1-8054	1SFA 619 920 R8054	10.00
	Legend plate, yellow aluminum 60mm	CA6-1026	1SFA619930R1026	6.00

Compact E-Stop Assembled stations

Assembled 1-seat emergency stop enclosures

	Description	Catalog Number	Order Code	List Price
	Emergency Stop Enclosure Twist release; red button 2NC	CEPY1-1001	1SFA 619 821 R1001	\$ 73.00
	With aluminum legend plate	CEPY1-1001LP		80.00
	Emergency Stop Enclosure Pull release; red button 2NC	CEPY1-1002	1SFA 619 821 R1002	73.00
	With aluminum legend plate	CEPY1-1002LP		80.00
	Emergency Stop Enclosure with Shroud Twist release; red button 2NC	CEPY1-2001	1SFA 619 821 R2001	84.00
	Emergency Stop Enclosure with Shroud Pull release; red button 2NC	CEPY1-2002	1SFA 619 821 R2002	84.00
	Machine Stop Enclosure Twist release; black button 1NO + 1NC	CEP1-1001	1SFA 619 81 R1002	73.00
	Machine Stop Enclosure Pull release; black button 1NO + 1NC	CEP1-1002	1SFA 619 811 R1002	73.00
	Machine Stop Enclosure with Shroud Twist release; black button 1NO + 1NC	CEP1-2001	1SFA 619 811 R2001	84.00
	Machine Stop Enclosure with Shroud Pull release; black button 1NO + 1NC	CEP1-2002	1SFA 619 811 R2002	84.00

Steel enclosures, empty 22mm



MEM121-0

NEMA 12, 0.075" carbon steel, ANSI-61 gray, 22mm

Description	Height	Width	Depth	Catalog Number	List price
1-hole	3.50	3.25	2.75	MEM121-0	\$ 95
2-hole	5.75	3.25	2.75	MEM122-0	105
3-hole	8.00	3.25	2.75	MEM123-0	120
4-hole	10.25	3.25	2.75	MEM124-0	150
6-hole, 2x3	9.50	6.25	3.00	MEM126-0	190



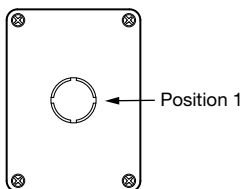
MEMX3-0

NEMA 4X, stainless steel, brushed finish, 22mm

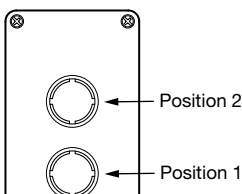
Description	Height	Width	Depth	Catalog Number	List price
1-hole	3.50	3.25	2.75	MEMX1-0	\$ 275
2-hole	5.75	3.25	2.75	MEMX2-0	340
3-hole	8.00	3.25	2.75	MEMX3-0	380
4-hole	10.25	3.25	2.75	MEMX4-0	425
6-hole, 2x3	9.50	6.25	3.00	MEMX6-0	550

Steel enclosures, assembled stations 22mm

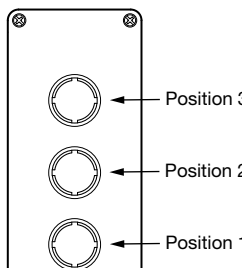
1-Seat Stations



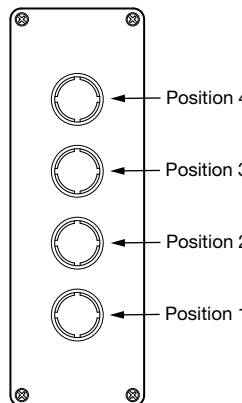
1 Position



2 Position



3 Position



4 Position

					Type 12		Type 4X Stainless	
	Pos 1	Pos 2	Pos 3	Pos 4	Catalog Number	List price	Catalog Number	List price
E-STOP								
Type	40mm Twist	-	-	-	MEM121-ES	\$ 160	MEMX1-ES	\$ 395
Color	Red	-	-	-				
Contacts	2NC	-	-	-				
Name Plate	EMER. STOP	-	-	-				
E-STOP Illuminated								
Type	40mm Twist	-	-	-	MEM121-1ES	211	MEMX1-1ES	447
Color	Red Illuminated	-	-	-				
Contacts	2NC	-	-	-				
Lamp	120V LED	-	-	-				
Name Plate	EMER. STOP	-	-	-				

2-Seat Stations

					Type 12		Type 4X Stainless	
	Pos 1	Pos 2	Pos 3	Pos 4	Catalog Number	List price	Catalog Number	List price
START, STOP								
Type	Mom, extend.	Mom, flush	-	-	MEM122-SS	\$ 174	MEMX2-SS	\$ 482
Color	Red	Green	-	-				
Contacts	1NO + 1NC	1NO + 1NC	-	-				
Name Plate	STOP	START	-	-				
HOA, RUN LIGHT								
Type	3-pos, maint.	Pilot light	-	-	MEM122-1HOARL	180	MEMX2-1HOARL	489
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	List price	Catalog Number	List price
START, STOP, RUN LIGHT								
Type	Mom, extend.	Mom, flush	Pilot light	-	MEM123-1SSRL	\$ 214	MEMX3-1SSRL	\$ 545
Color	Red	Green	Red	-				
Contacts	1NO + 1NC	1NO + 1NC	120V LED	-				
Name Plate	STOP	START	Run	-				
START, STOP, E-STOP								
Type	40mm Twist	Mom, extend.	Mom, flush	-	MEM123-SSES	236	MEMX3-SSES	566
Color	Red	Red	Green	-				
Contacts	2NC	1NO + 1NC	1NO + 1NC	-				
Name Plate	EMER. STOP	STOP	START	-				

4-Seat Stations

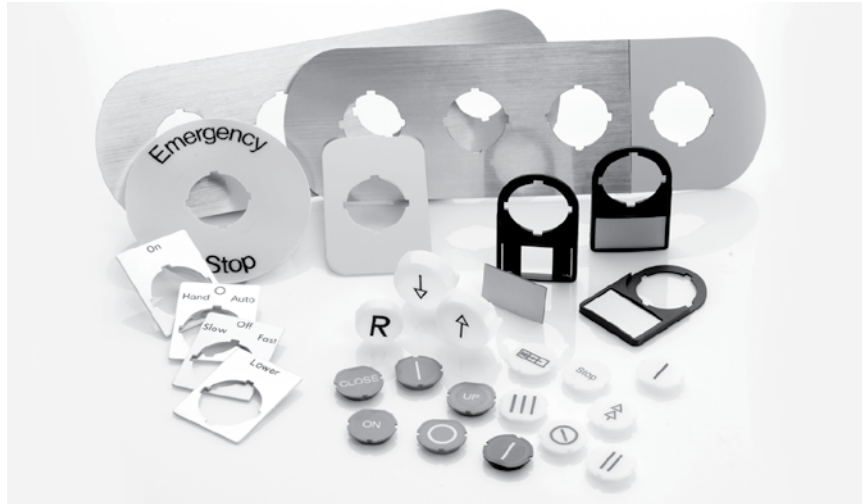
					Type 12		Type 4X Stainless	
	Pos 1	Pos 2	Pos 3	Pos 4	Catalog Number	List price	Catalog Number	List price
START, STOP, E-STOP, RUN LIGHT								
Type	40mm Twist	Mom, extend.	Mom, flush	Pilot light	MEM124-1ESSRL	\$ 276	MEMX4-1ESSRL	\$ 654
Color	Red	Red	Green	Red				
Contacts	2NC	1NO + 1NC	1NO + 1NC	120V LED				
Name Plate	EMER. STOP	STOP	START	Run				



Legend plates

22mm

22mm Legend plates



8

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 textFor 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

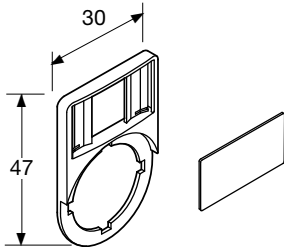
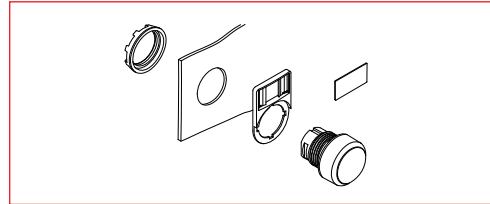
Text caps

- For illuminated pushbuttons (flush or extended) and pilot lights with or without text or symbol or with customer selected text.

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 No.	List Price
Black	1SFA 616 920 R8120	\$ 0.70

Inserts

Description	Catalog No.	List Price
Of brushed aluminum on black plastic Without text or symbol	1SFA 616 920 R8121	\$ 0.70

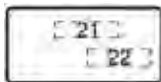
Inserts with text/symbol

Description	Catalog No.	List Price
Of brushed aluminum on black plastic With text or symbol		
O	1SFA 611 930 R1032	\$ 0.75
I	1SFA 611 930 R1033	
→	1SFA 611 930 R1034	
→→	1SFA 611 930 R1035	
Close	1SFA 611 930 R1036	
Open	1SFA 611 930 R1037	
On	1SFA 611 930 R1038	
Off	1SFA 611 930 R1039	
Fast	1SFA 611 930 R1040	
Slow	1SFA 611 930 R1041	
Down	1SFA 611 930 R1042	
Up	1SFA 611 930 R1043	
Start	1SFA 611 930 R1044	
Stop	1SFA 611 930 R1045	

Inserts for two-position selector switches

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

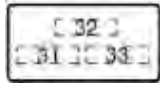
Description	Catalog No.	List Price
With text or symbol		
Pos. 21 Pos. 22		
O I	1SFA 611 930 R 1070	\$ 0.75
I II	1SFA 611 930 R 1071	
→ →→	1SFA 611 930 R 1072	
Off On	1SFA 611 930 R 1073	
Stop Start	1SFA 611 930 R 1074	
Low High	1SFA 611 930 R 1075	
Slow Fast	1SFA 611 930 R 1076	
Close Open	1SFA 611 930 R 1077	
Jog Run	1SFA 611 930 R 1078	
Hand Auto	1SFA 611 930 R 1079	



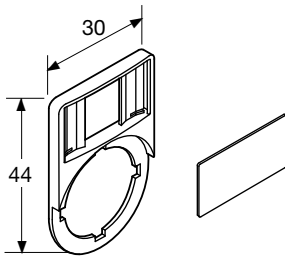
For two-position selector switch

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 No.	List Price
<u>With text or symbol</u>		
Pos. 31 Pos. 32 Pos. 33		
← O →	1SFA 611 930 R 1080	\$ 0.75
→ O →→	1SFA 611 930 R 1081	
I O II	1SFA 611 930 R 1082	
Hand O Auto	1SFA 611 930 R 1083	
Slow Off Fast	1SFA 611 930 R 1084	

Legend plate holder (grey) for plastic enclosures

Description	Catalog No.	List Price
Grey	1SFA 611 930 R1060	\$ 0.75

Inserts

Description	Catalog No.	List Price
Of brushed aluminum on black plastic		
Without text or symbol	1SFA 611 930 R1061	\$ 0.50

Inserts with text/symbol

Description	Catalog No.	List Price
Of brushed aluminum on black plastic		
<u>With text or symbol</u>		
O	1SFA 611 930 R1062	\$ 0.75
I	1SFA 611 930 R1063	
II	1SFA 611 930 R1064	

Special legend plates Emergency stops 22mm

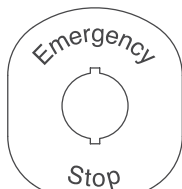
Emergency stop legend plates, 70mm, for modular enclosures ①



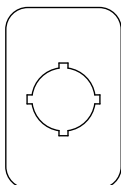
SK 615 546-2



CA6-1026



MA6-1101



1SFA 611 930 R1011

Description/Text	Catalog No.	List Price
Black text on a yellow aluminum plate. Emergency Stop Without text	SK 615 546-2 SK 615 546-8	\$ 6.00
Black text on a yellow plastic plate. Can be used as yellow background. Emergency Stop	1SFA 616 915 R1005	5.00

Emergency stop legend plates, 60mm, for Compact enclosures

Description/Text	Catalog No.	Order code	List Price
Legend plate, yellow aluminum, 60mm	CA6-1026	1SFA619930R1026	\$ 6.00

Emergency stop legend plates for Modular enclosures

Description/Text	Catalog No.	Order code	List Price
For horizontally mounted enclosures with yellow plastic/black text	MA6-1026	1SFA611930R1026	\$ 25.00
For vertically mounted enclosures with yellow plastic/black text	MA6-1101	1SFA611930R1101	25.00

Emergency stop legend plate

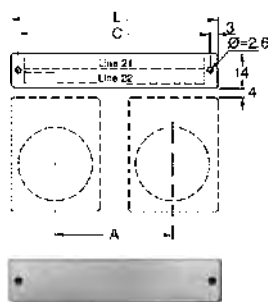
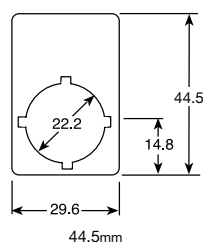
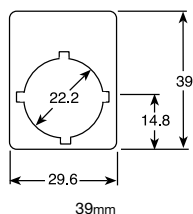
Description/Text	Catalog No.	List Price
Black text on a yellow aluminum plate. Legend plate without text	1SFA 611 930 R1010	
Legend plate (1SFA 611 930 R1010) with text: Emergency Stop	1SFA 611 930 R1019	\$ 5.00
Black text on a yellow plastic plate. Legend plate without text	1SFA 611 930 R1011	4.00
Legend plate (1SFA 611 930 R1011) with text: Emergency Stop	1SFA 611 930 R1023	10.00

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 No.	List Price
39mm H	SK 615 540-1	\$ 3.00
44.5mm H	SK 615 541-1	

22mm Engraved fixed legend plates, with text ①

Of silvergrey aluminum

Text	Catalog No.	List Price
English		
Close	SK 615 552-13	\$ 3.00
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 Catalog No.	List Price
		A	L	C		
1	7	-	29.6	23.6	SK 615 545-1	\$ 6.00
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: ____ - ____ - ____

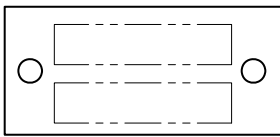
To be completed by ABB personnel:

ENGRAVER: _____

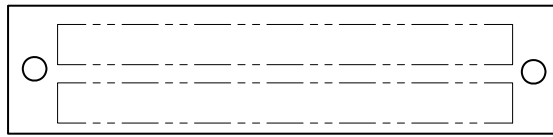
Q.C. INSPECTION: _____

PRINT INFORMATION TO BE ENGRAVED

MAX 7
CHARAC-
TERS PER
LINE

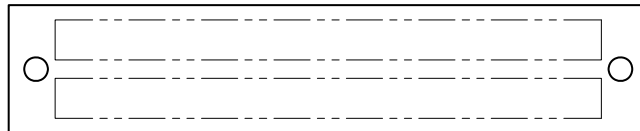


SK 615 545-1



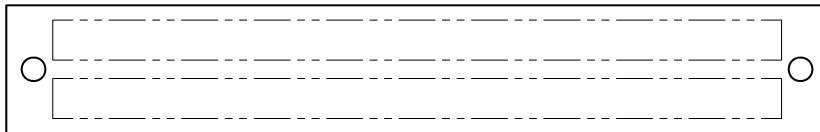
SK 615 545-2

MAXIMUM OF 20
CHARACTERS PER LINE



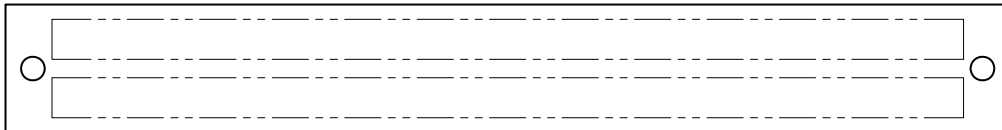
SK 615 545-3

MAXIMUM OF 24
CHARACTERS PER LINE



SK 615 545-4

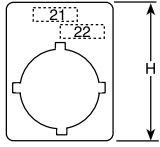
MAXIMUM OF 33
CHARACTERS PER LINE



SK 615 545-5

MAXIMUM OF 44
CHARACTERS PER LINE

Legend plates for 2 position selector switches 22mm



H = 39 mm

Engraved fixed legend plates, with symbols ①

Of silvergrey aluminum

Symbol/Text

Pos 21 Pos. 22

O I
I II
→ →→

Catalog No.

SK 615 550-75
SK 615 550-76
SK 615 562-72

List Price

\$ 3.00

Engraved fixed legend plates, with text ①

Of silvergrey aluminum

Symbol/Text

Pos 21 Pos. 22

English

Hand Auto
Jog Run
Off On
Stop Start

Catalog No.

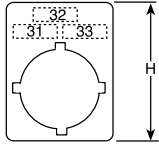
SK 615 550-71
SK 615 552-52
SK 615 552-53
SK 615 552-55

List Price

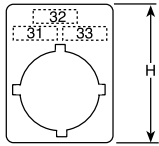
\$ 3.00

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

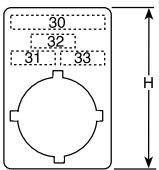
Legend plates for 3 position selector switches 22mm



H = 39 mm



H = 39 mm



H = 44.5 mm

Engraved fixed legend plates, with symbols ①

Of silvergrey aluminum

Symbol/Text

Pos 31 Pos. 32 Pos. 33

I	○	II
←	○	→
→	○	→→

Catalog No.

List Price

SK 615 550-81

SK 615 562-82

SK 615 562-83

\$ 3.00

Engraved fixed legend plates, with text ①

Of silvergrey aluminum

Symbol/Text

Pos 31 Pos. 32 Pos. 33

English

Hand	○	Auto
Slow	Off	Fast

Catalog No.

List Price

SK 615 550-80

SK 615 552-60

\$ 3.00

Aluminum name plate blank (anodized silvergray aluminum)

Blank 39mm

44.5mm

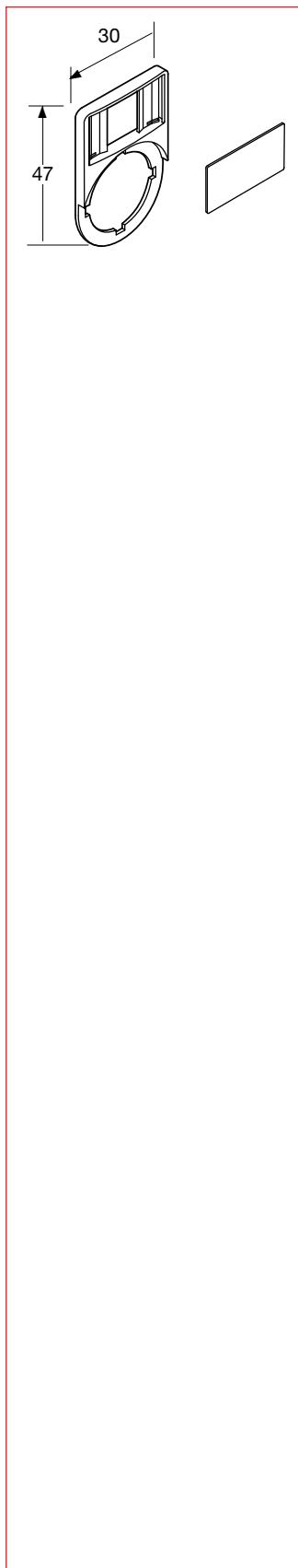
SK 615 540-1

SK 615 541-1

3.00

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	List price
 1 line	11	MP-NP19-01	\$ 5.90
 2 lines	11	MP-NP19-02	
 2 position selector switch	5	MP-NP19-03	
 3 position selector switch	5	MP-NP19-04	
 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.

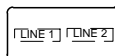
EXAMPLE:

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

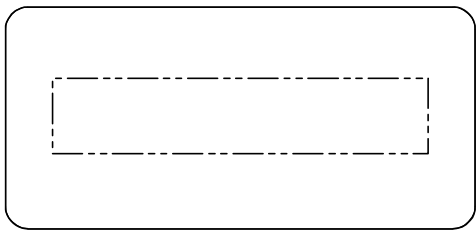
ENGRAVED LEGEND PLATE FORM
MP-NP19

PAGE: ____ OF: ____

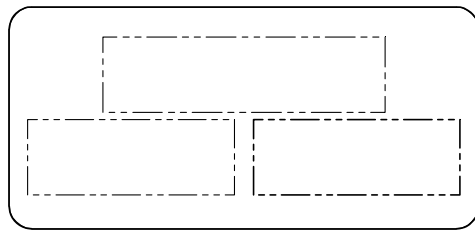
MP-NP19- ____ (BRUSHED ALUMINUM)
ORIG. DATE: _____
ISSUED BY: _____
ALL CAPITALS? YES NO
REMARKS: _____

ORDER NUMBER: _____
ORDER: QTY: _____
SHIPPING METHOD: _____
DUE DATE: ____ - ____ - ____
ENGRAVER: _____
Q.C. INSPECTION: _____

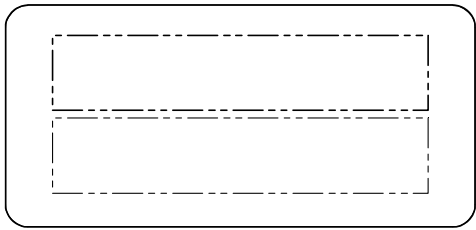
PRINT INFORMATION TO BE ENGRAVED



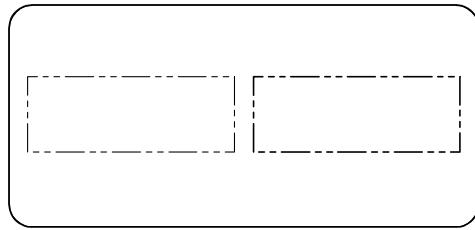
-01



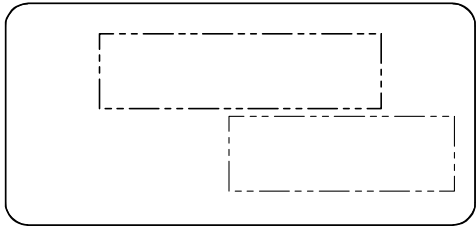
-04



-02



-05



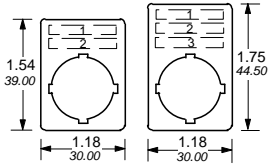
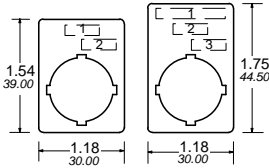
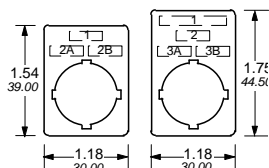
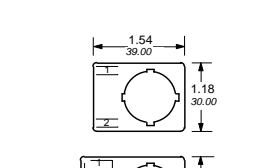
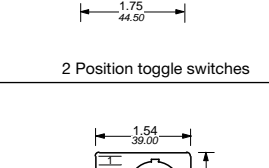
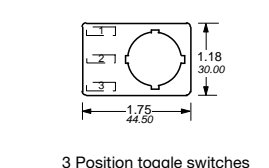
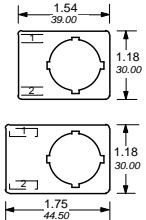
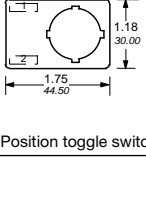
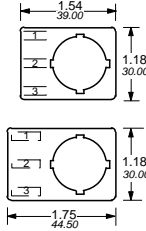
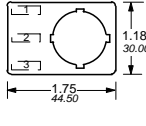
-03

MP-NP19: REV. A
03/04/05

Custom engraved nameplates 22mm

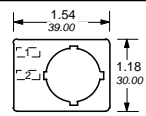
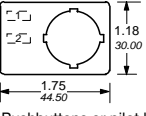
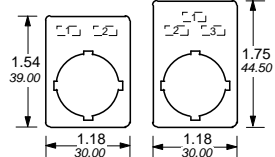
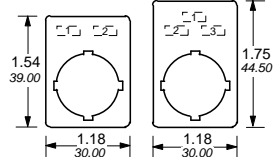
Pilot Devices
Legend plates

Fixed nameplates – aluminum ①

Type	Maximum letters per line	Catalog number	List price
 Pushbuttons or pilot lights	11	MP-NPE28-01	\$ 6.50
	39mm		
 2 Position selector switches	11	MP-NPE29-01	\$ 6.50
	44.5mm		
 2 Position selector switches	5	MP-NPE28-02	\$ 6.50
	39mm		
 3 Position selector switches	11 (line 1) 5 (line 2) 5 (line 3)	MP-NPE29-02	\$ 6.50
	44.5mm		
 3 Position selector switches	5	MP-NPE28-03	\$ 6.50
	39mm		
 3 Position selector switches	11 (line 1) 5 (line 2) 5 (line 3A) 5 (line 3B)	MP-NPE29-03	\$ 6.50
	44.5mm		
 2 Position toggle switches	4	MP-NPE28-04	\$ 6.50
	39mm		
 2 Position toggle switches	5	MP-NPE29-04	\$ 6.50
	44.5mm		
 3 Position toggle switches	5	MP-NPE28-05	\$ 6.50
	39mm		
 3 Position toggle switches	11 (line 1) 5 (line 2) 5 (line 3)	MP-NPE29-05	\$ 6.50
	44.5mm		



Fixed nameplates – aluminum ①

Type	Maximum letters per line	Catalog number	List price
 Pushbuttons or pilot lights	11	MP-NPE28-06	\$ 6.50
	39mm		
 Pushbuttons or pilot lights	11	MP-NPE29-06	\$ 6.50
	44.5mm		
 2 Position selector switches	5	MP-NPE28-07	\$ 6.50
	39mm		
 2 Position selector switches	11 (line 1) 5 (line 2) 5 (line 3)	MP-NPE29-07	\$ 6.50
	44.5mm		

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.

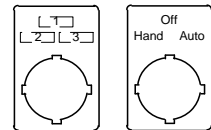
Ordering custom engraved nameplates – USE ORDER FORM FROM FOLLOWING PAGES

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 8.74.

Engraved legend plate form
Custom engraved nameplates
22mm

ENGRAVED LEGEND PLATE FORM

MP-NPE28

PAGE: ___ OF: ___

MP-NPE28-___ (BRUSHED ALUMNINUM)

ORDER NUMBER: _____

ORIG. DATE: _____

ORDER: QTY: _____

ISSUED BY: _____

SHIPPING METHOD: _____

ALL CAPITALS? YES NO

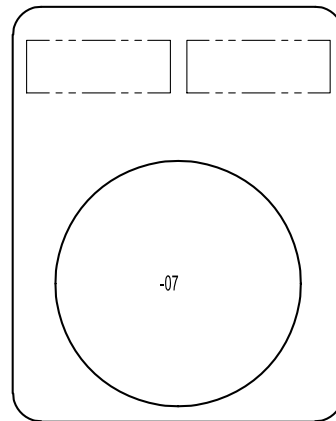
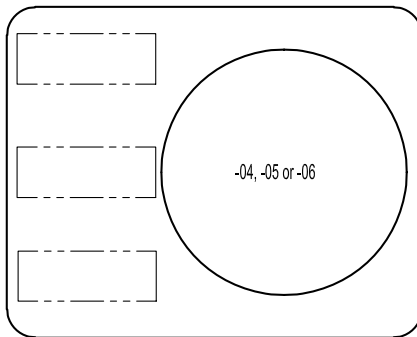
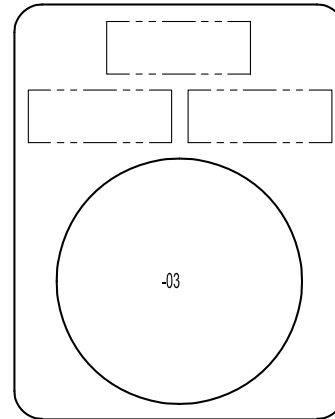
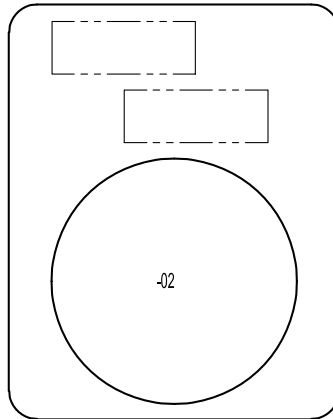
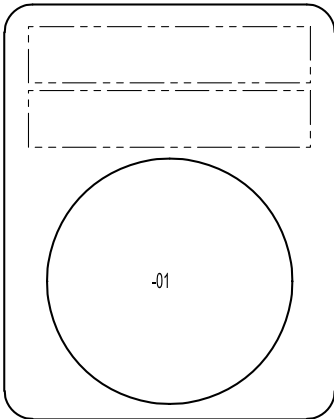
DUE DATE: ___ - ___ - ___

REMARKS: _____

ENGRAVER: _____

Q.C. INSPECTION: _____

PRINT INFORMATION TO BE ENGRAVED



MP-NPE28

5/26/04

Engraved legend plate form
Custom engraved nameplates
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

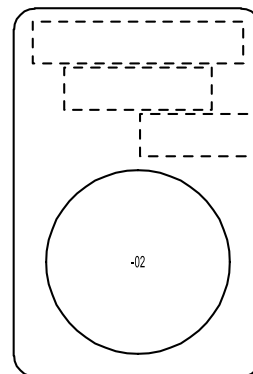
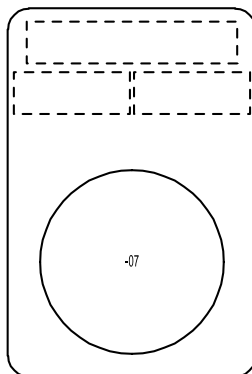
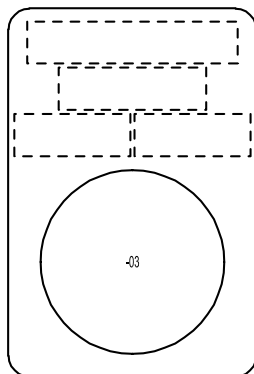
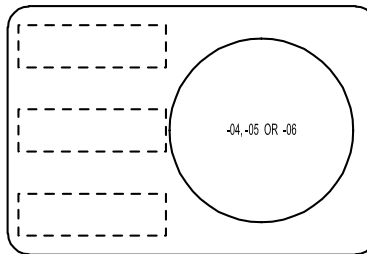
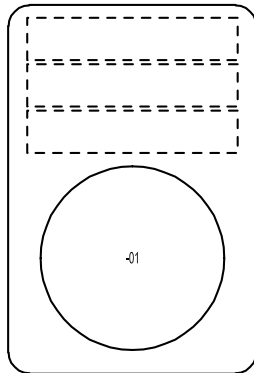
DUE DATE: ___ - ___ - ___

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

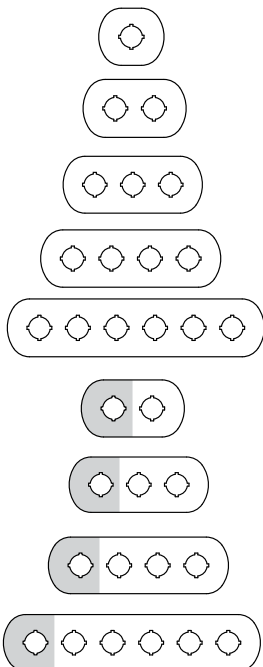
Description	Catalog No.	List price
Of silvergrey aluminum on plastic.		
1-seat	1SFA 611 930 R1000	\$ 12.00
2-seat	1SFA 611 930 R1002	15.00
3-seat	1SFA 611 930 R1003	18.00
4-seat	1SFA 611 930 R1004	21.00
6-seat	1SFA 611 930 R1005	27.00
Of silvergrey aluminum on plastic. (Pos. 1 Yellow)		
2-seat	1SFA 611 930 R1006	20.00
3-seat	1SFA 611 930 R1007	23.00
4-seat	1SFA 611 930 R1008	26.00
6-seat	1SFA 611 930 R1009	32.00

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 No.	List price
Custom engraved 1-seat	1SFA 611 930 R1000	CUSTOM 1 SEAT	\$ 24.00
Custom engraved 2-seat	1SFA 611 930 R1002	CUSTOM 2 SEAT	30.00
Custom engraved 3-seat	1SFA 611 930 R1003	CUSTOM 3 SEAT	36.00
Custom engraved 4-seat	1SFA 611 930 R1004	CUSTOM 4 SEAT	42.00
Custom engraved 6-seat	1SFA 611 930 R1005	CUSTOM 6 SEAT	54.00
Custom engraved 2-seat, position 1 yellow	1SFA 611 930 R1006	CUSTOM 2 SEAT Y	40.00
Custom engraved 3-seat, position 1 yellow	1SFA 611 930 R1007	CUSTOM 3 SEAT Y	46.00
Custom engraved 4-seat, position 1 yellow	1SFA 611 930 R1008	CUSTOM 4 SEAT Y	52.00
Custom engraved 6-seat, position 1 yellow	1SFA 611 930 R1009	CUSTOM 6 SEAT Y	64.00



Engraved legend plate form
Custom engraved nameplates
1-Seat, vertical, 22mm

ENGRAVED LEGEND PLATE FORM

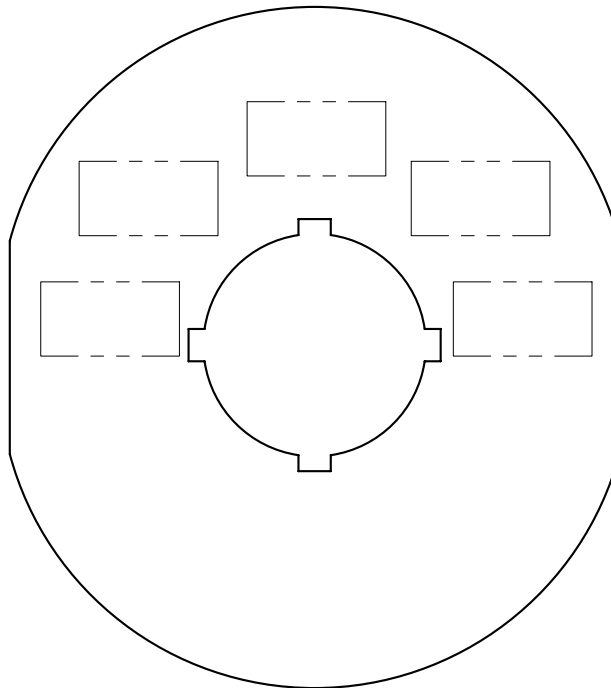
PAGE ____ of ____

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 _____

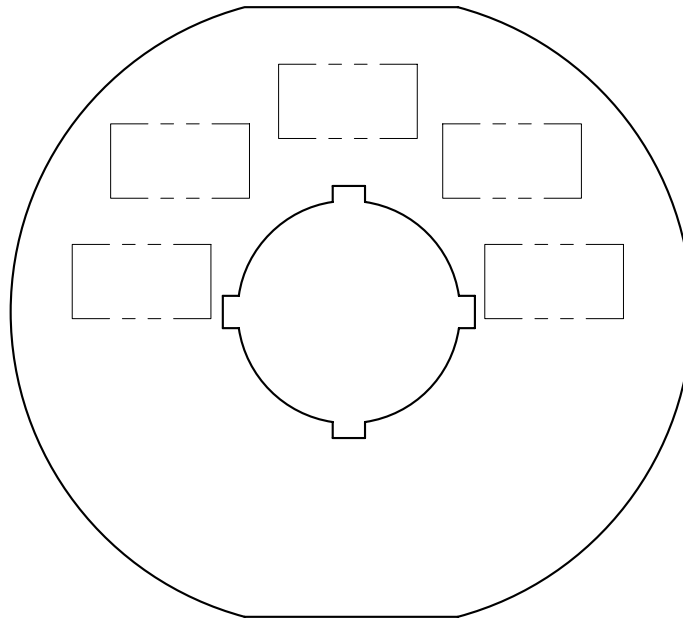
REMARKS: _____

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

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 _____

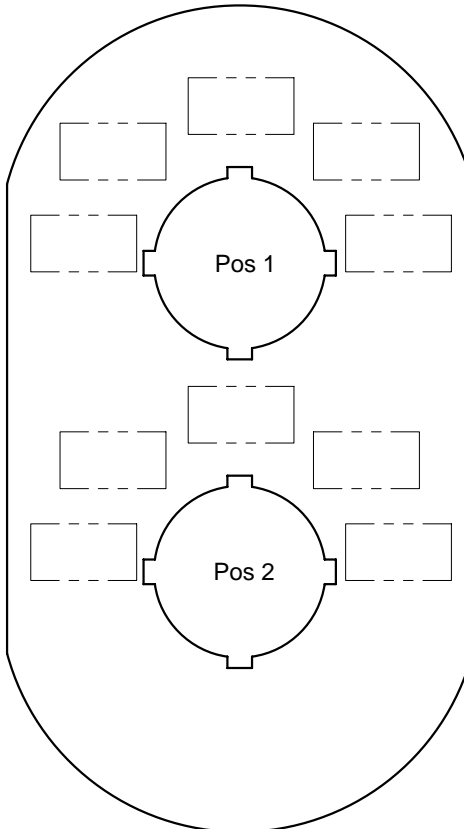
REMARKS : _____

To be completed by ABB personnel.

ENGRAVER _____

Q.C. INSPECTION: _____

PRINT INFORMATION TO BE ENGRAVED:

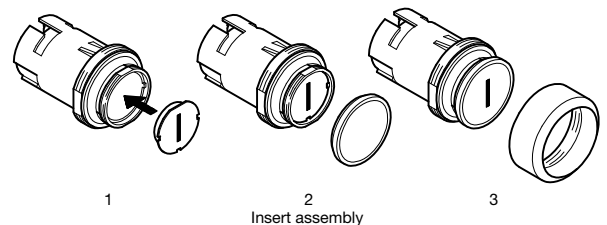
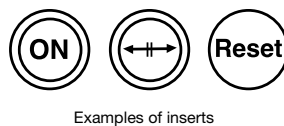
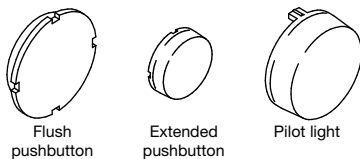


Text cap inserts 22mm

Pilot Devices
Legend plates

Legend	Cap color ①	Suffix code ②	Flush button catalog number	Extended button catalog number	Pilot light catalog number	List price
	White	C82	1SFA 616 901 R9036	—	—	\$ 1.80
Start	White	C67	1SFA 616 901 R2030	1SFA 616 902 R2030	1SFA 616 903 R2030	
START	Green	C5	1SFA 616 906 R1042	—	—	
	Black	C81	1SFA 616 908 R1042	—	—	
On	White	C68	1SFA 616 901 R1020	1SFA 616 902 R1020	1SFA 616 903 R1020	
ON	White	C69	1SFA 616 901 R1039	—	1SFA 616 903 R1039	
	Green	C70	1SFA 616 906 R1039	—	—	
	Black	C1	1SFA 616 908 R1039	—	—	
Off	White	C71	1SFA 616 901 R1019	1SFA 616 902 R1019	1SFA 616 903 R1019	
OFF	White	C72	—	1SFA 616 902 R1040	—	
	Red	C73	—	1SFA 616 905 R1040	—	
	Black	C2	1SFA 616 908 R1040	1SFA 616 909 R1040	—	
Stop	White	C74	1SFA 616 901 R1031	1SFA 616 902 R1031	1SFA 616 903 R1031	
STOP	Red	C4	1SFA 616 904 R1047	1SFA 616 905 R1047	—	
Reset	White	C75	1SFA 616 901 R1025	1SFA 616 902 R1025	1SFA 616 903 R1025	
Blank	White	C15	1SFA 616 901 R9000	1SFA 616 902 R9000	1SFA 616 903 R9000	
	Green	CG	2949 1468-2	2949 1469-2	—	
UP	Green	C11	1SFA 616 906 R1043	—	—	
DOWN	Green	C12	1SFA 616 906 R1044	—	—	
OPEN	White	C16	1SFA 616 901 R1045	—	—	
	Green	C19	1SFA 616 906 R1045	—	—	
CLOSE	White	C17	1SFA 616 901 R1046	—	—	
	Green	C20	1SFA 616 906 R1046	—	—	
REV	Green	C6	1SFA 616 906 R1048	—	—	
FWD	Green	C7	1SFA 616 906 R1049	—	—	
SLOW	Green	C8	1SFA 616 906 R1050	—	—	
FAST	Green	C9	1SFA 616 906 R1051	—	—	
JOG	Green	C10	1SFA 616 906 R1052	—	—	
RESET	Black	C3	1SFA 616 908 R1041	—	—	
LATCH	White	C18	1SFA 616 901 R1053	—	—	

8



① Illuminated pushbuttons and pilot lights must use white insert.

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

Text cap inserts 22mm

Flush button



Can be turned 90° or 180°

Extended button



Pilot light



Text caps for illuminated pushbuttons and pilot lights

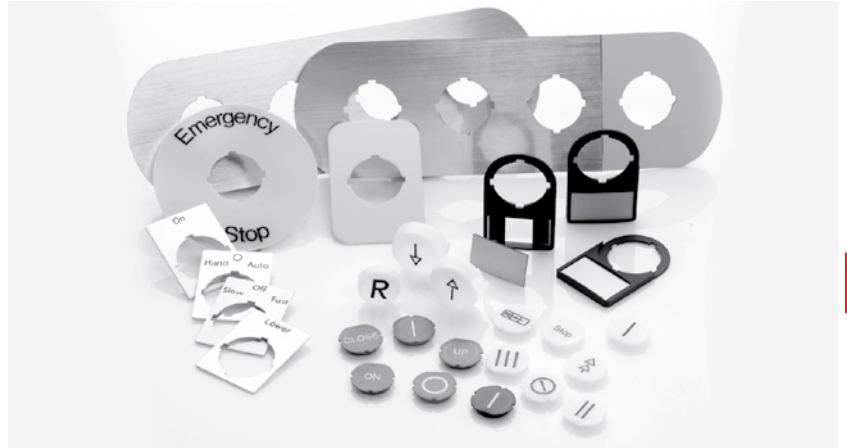
Text/Symbol ^①	Cap color ^②	Suffix	Flush button Catalog No.	Extended button Catalog No.	Pilot light Catalog No.	List Price
→	White	C14	1SFA 616 901 R9006	1SFA 616 902 R9006	1SFA 616 903 R9006	\$ 1.80
O	White	C21	1SFA 616 901 R9004	1SFA 616 902 R9004	1SFA 616 903 R9004	
	Red	C22	1SFA 616 904 R9004	1SFA 616 905 R9004	–	
	Black	C23	1SFA 616 908 R9004	–	–	
I	White	C24	1SFA 616 901 R9002	1SFA 616 902 R9002	1SFA 616 903 R9002	
	Green	C25	1SFA 616 906 R9002	–	–	
	Black	C26	1SFA 616 908 R9002	–	–	
II	White	C27	1SFA 616 901 R9003	1SFA 616 902 R9003	1SFA 616 903 R9003	
	Green	C28	1SFA 616 906 R9003	–	–	
	Black	C29	1SFA 616 908 R9003	–	–	
III	White	C30	1SFA 616 901 R9028	1SFA 616 902 R9028	–	
	Black	C31	1SFA 616 908 R9028	–	–	
+	White	C32	1SFA 616 901 R9011	1SFA 616 902 R9011	–	
	Green	C33	1SFA 616 906 R9011	–	–	
	Black	C34	1SFA 616 908 R9011	–	–	
–	White	C35	1SFA 616 901 R9012	–	–	
	Red	C36	1SFA 616 904 R9012	–	–	
	Black	C37	1SFA 616 908 R9012	–	–	
↑	White	C38	1SFA 616 901 R9005	1SFA 616 902 R9005	1SFA 616 903 R9005	
	Black	C39	1SFA 616 908 R9005	–	–	
↗	White	C40	1SFA 616 901 R9014	1SFA 616 902 R9014	–	
	Black	C41	1SFA 616 908 R9014	–	–	
↔	White	C42	1SFA 616 901 R9015	1SFA 616 902 R9015	–	
	Black	C43	1SFA 616 908 R9015	–	–	
↔	White	C44	1SFA 616 901 R9016	1SFA 616 902 R9016	–	
	Black	C45	1SFA 616 908 R9016	–	–	
↘	White	C46	1SFA 616 901 R9017	1SFA 616 902 R9017	–	
	Black	C47	1SFA 616 908 R9017	–	–	
⊕	White	C47	1SFA 616 901 R9018	1SFA 616 902 R9018	–	
	Black	C48	1SFA 616 908 R9018	–	–	
●	White	C49	1SFA 616 901 R9019	1SFA 616 902 R9019	–	
	Black	C50	1SFA 616 908 R9019	–	–	
⊙	White	C51	1SFA 616 901 R9020	1SFA 616 902 R9020	–	
	Black	C52	1SFA 616 908 R9020	–	–	
✎	White	C53	1SFA 616 901 R9021	1SFA 616 902 R9021	–	
	Black	C54	1SFA 616 908 R9021	–	–	
⚡	White	C55	1SFA 616 901 R9022	1SFA 616 902 R9022	–	
	Black	C56	1SFA 616 908 R9022	–	–	
⚡	White	C57	1SFA 616 901 R9023	1SFA 616 902 R9023	–	
	Black	C58	1SFA 616 908 R9023	–	–	
⚡	White	C59	1SFA 616 901 R9024	1SFA 616 902 R9024	–	
	Black	C60	1SFA 616 908 R9024	–	–	
⚡	White	C61	1SFA 616 901 R9025	1SFA 616 902 R9025	–	
	Black	C62	1SFA 616 908 R9025	–	–	
⚡	White	C63	1SFA 616 901 R9026	1SFA 616 902 R9026	–	
	Black	C64	1SFA 616 908 R9026	–	–	
⚡	White	C65	1SFA 616 901 R9027	1SFA 616 902 R9027	–	
	Black	C66	1SFA 616 908 R9027	–	–	

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

② Add "E" for extended button or "P" for pilot light.



Legend plates 30mm



Custom legend plates

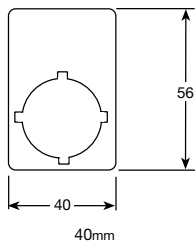
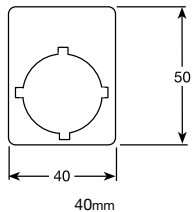
- Legend plate with customer selected text

Text caps

- For illuminated pushbuttons (flush or extended) and pilot lights
- With or without text or symbol or with customer selected text

30mm Legend plates

Legend plates for pushbuttons 30mm



Blank fixed legend plates

Of silvergrey aluminum

Size	Catalog Number	List Price
50mm H	SK 615 640-1	\$ 1.80
56mm H	SK 615 641-1	

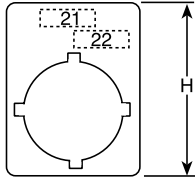
Engraved fixed legend plates, with text ①

Of silvergrey aluminum, 50mm H

Text	Catalog Number	List Price
English		
Close	SK 615 652-13	\$ 1.80
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



2 Positions

Engraved fixed legend plates, with text ①

Of silvergrey aluminum, 50mm H

Symbol/Text

Pos 21 Pos. 22

English

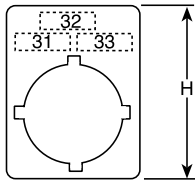
Fwd Rev
Hand Auto
Jog Run
Off On
Stop Start

Catalog Number

List Price

SK 615 652-FR
SK 615 652-71
SK 615 652-52
SK 615 652-53
SK 615 652-55

\$ 1.80



3 Positions

Engraved fixed legend plates, with text ①

Of silvergrey aluminum, 50mm H

Symbol/Text

Pos 31 Pos. 32 Pos. 33

English

Hand O Auto
Slow Off Fast

Catalog Number

List Price

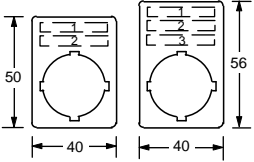
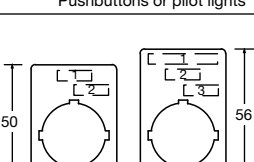
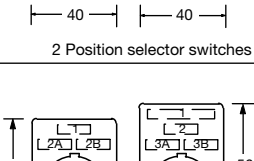
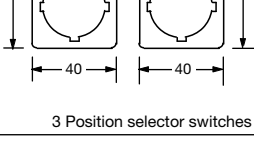
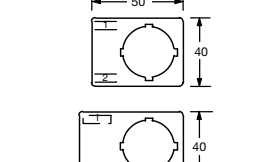
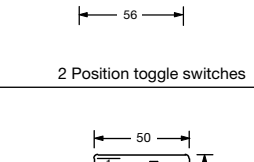
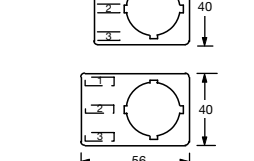
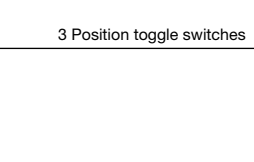

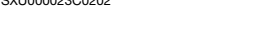
SK 615 652-80
SK 615 652-60

\$ 1.80

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

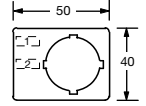
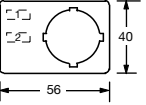
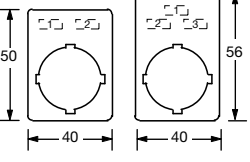
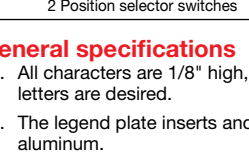
Custom engraved legend plates 30mm

Fixed nameplates — aluminum

Type	Maximum letters per line	Catalog number	List price
 <p>Pushbuttons or pilot lights</p>	11	G1MP-NPE28-01	\$ 6.50
	50mm		
 <p>Pushbuttons or pilot lights</p>	11	G1MP-NPE29-01	\$ 6.50
	56mm		
 <p>2 Position selector switches</p>	5	G1MP-NPE28-02	\$ 6.50
	50mm		
 <p>2 Position selector switches</p>	11 (line 1) 5 (line 2) 5 (line 3)	G1MP-NPE29-02	\$ 6.50
	56mm		
 <p>3 Position selector switches</p>	5	G1MP-NPE28-03	\$ 6.50
	50mm		
 <p>3 Position selector switches</p>	11 (line 1) 5 (line 2) 5 (line 3A) 5 (line 3B)	G1MP-NPE29-03	\$ 6.50
	56mm		
 <p>2 Position toggle switches</p>	4	G1MP-NPE28-04	\$ 6.50
	50mm		
 <p>2 Position toggle switches</p>	5	G1MP-NPE29-04	\$ 6.50
	56mm		
 <p>3 Position toggle switches</p>		G1MP-NPE28-05	\$ 6.50
	50mm		
 <p>3 Position toggle switches</p>		G1MP-NPE29-05	\$ 6.50
	56mm		



Fixed nameplates — aluminum

Type	Maximum letters per line	Catalog number	List price
 <p>Pushbuttons or pilot lights</p>	11	G1MP-NPE28-06	\$ 6.50
	50mm		
 <p>Pushbuttons or pilot lights</p>	11	G1MP-NPE29-06	\$ 6.50
	56mm		
 <p>2 Position selector switches</p>	5	G1MP-NPE28-07	\$ 6.50
	50mm		
 <p>2 Position selector switches</p>	11 (line 1) 5 (line 2) 5 (line 3) 5 (line 3)	G1MP-NPE29-07	\$ 6.50
	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.

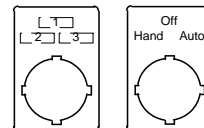
Ordering custom engraved nameplates

- 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

- OFF
- HAND
- AUTO



Engraved legend plate form
Custom engraved legend plates
30mm

ENGRAVED LEGEND PLATE FORM

G1MP-NPE28

PAGE: ___ OF: ___

G1MP-NPE28-___ (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

The diagram illustrates seven different legend plate configurations:

- 01:** A central circle with two dashed rectangular boxes above it.
- 02:** A central circle with one dashed rectangular box above it and one solid rectangular box below it.
- 03:** A central circle with one dashed rectangular box above it and two solid rectangular boxes below it.
- 04, -05 or -06:** A central circle with three dashed rectangular boxes stacked vertically to its left.
- 07:** A central circle with two dashed rectangular boxes above it.

G1MP-NPE28
 6/10/04

Engraved legend plate form

Custom engraved legend plates
30mm

ENGRAVED LEGEND PLATE FORM

G1MP-NPE29

PAGE: ___ OF: ___

G1MP-NPE29-___ (BRUSHED ALUMINUM)

ORDER NUMBER: _____

ORIG. DATE: _____

ORDER: QTY: _____

ISSUED BY: _____

SHIPPING METHOD: _____

ALL CAPITALS? YES NO

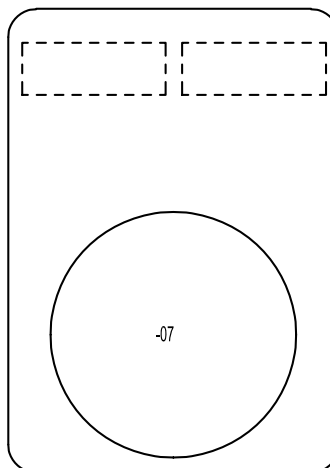
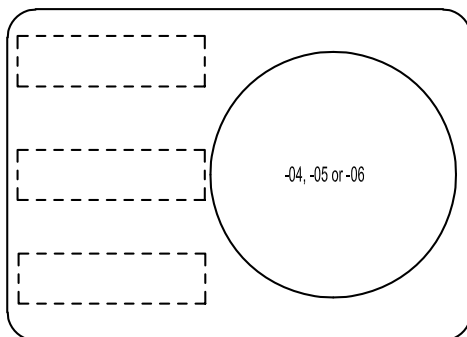
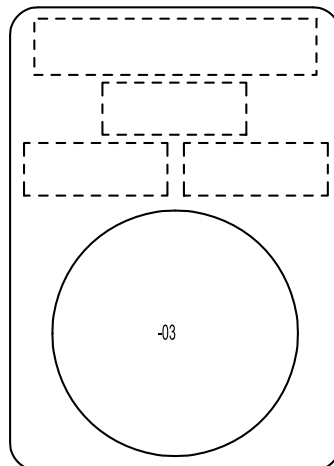
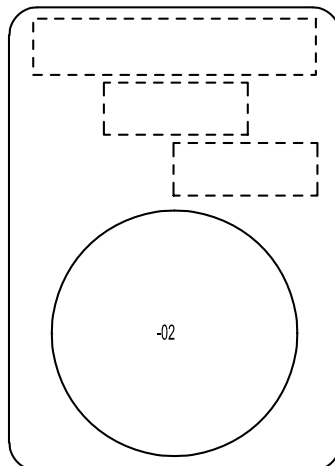
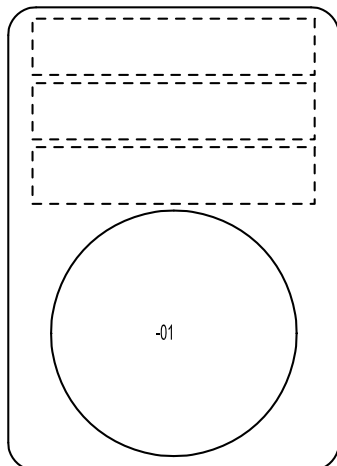
DUE DATE: ___ - ___ - ___

REMARKS: _____

ENGRAVER: _____

Q.C. INSPECTION: _____

PRINT INFORMATION TO BE ENGRAVED




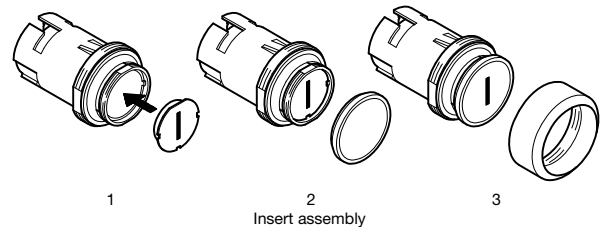
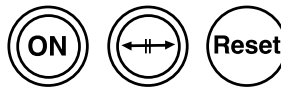
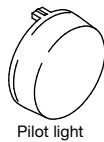
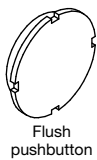
G1MP-NPE29

6/10/04

Text cap inserts 30mm

Pilot Devices
Legend plates

Legend	Cap color ①	Suffix code ②	Flush button catalog number	Extended button catalog number	Pilot light catalog number	List price
	White	C82	1SFA 616 901 R9036	—	—	\$ 1.80
Start	White	C67	1SFA 616 901 R2030	1SFA 616 902 R2030	1SFA 616 903 R2030	
START	Green	C5	1SFA 616 906 R1042	—	—	
	Black	C81	1SFA 616 908 R1042	—	—	
On	White	C68	1SFA 616 901 R1020	1SFA 616 902 R1020	1SFA 616 903 R1020	
ON	White	C69	1SFA 616 901 R1039	—	1SFA 616 903 R1039	
	Green	C70	1SFA 616 906 R1039	—	—	
	Black	C1	1SFA 616 908 R1039	—	—	
Off	White	C71	1SFA 616 901 R1019	1SFA 616 902 R1019	1SFA 616 903 R1019	
OFF	White	C72	—	1SFA 616 902 R1040	—	
	Red	C73	—	1SFA 616 905 R1040	—	
	Black	C2	1SFA 616 908 R1040	1SFA 616 909 R1040	—	
Stop	White	C74	1SFA 616 901 R1031	1SFA 616 902 R1031	1SFA 616 903 R1031	
STOP	Red	C4	1SFA 616 904 R1047	1SFA 616 905 R1047	—	
Reset	White	C75	1SFA 616 901 R1025	1SFA 616 902 R1025	1SFA 616 903 R1025	
Blank	White	C15	1SFA 616 901 R9000	1SFA 616 902 R9000	1SFA 616 903 R9000	
	Green	CG	2949 1468-2	2949 1469-2	—	
UP	Green	C11	1SFA 616 906 R1043	—	—	
DOWN	Green	C12	1SFA 616 906 R1044	—	—	
OPEN	White	C16	1SFA 616 901 R1045	—	—	
	Green	C19	1SFA 616 906 R1045	—	—	
CLOSE	White	C17	1SFA 616 901 R1046	—	—	
	Green	C20	1SFA 616 906 R1046	—	—	
REV	Green	C6	1SFA 616 906 R1048	—	—	
FWD	Green	C7	1SFA 616 906 R1049	—	—	
SLOW	Green	C8	1SFA 616 906 R1050	—	—	
FAST	Green	C9	1SFA 616 906 R1051	—	—	
JOG	Green	C10	1SFA 616 906 R1052	—	—	
RESET	Black	C3	1SFA 616 908 R1041	—	—	
LATCH	White	C18	1SFA 616 901 R1053	—	—	



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

Text cap inserts 30mm

Text caps for illuminated pushbuttons and pilot lights

Flush button



Can be turned 90° or 180°

Extended button



Pilot light



Text/Symbol ^①	Cap color	Suffix ^②	Flush button Catalog No.	Extended button Catalog No.	Pilot light Catalog No.	List Price
→	White	C14	1SFA 616 901 R9006	1SFA 616 902 R9006	1SFA 616 903 R9006	\$ 1.80
O	White	C21	1SFA 616 901 R9004	1SFA 616 902 R9004	1SFA 616 903 R9004	
	Red	C22	1SFA 616 904 R9004	1SFA 616 905 R9004	-	
	Black	C23	1SFA 616 908 R9004	-	-	
I	White	C24	1SFA 616 901 R9002	1SFA 616 902 R9002	1SFA 616 903 R9002	
	Green	C25	1SFA 616 906 R9002	-	-	
	Black	C26	1SFA 616 908 R9002	-	-	
II	White	C27	1SFA 616 901 R9003	1SFA 616 902 R9003	1SFA 616 903 R9003	
	Green	C28	1SFA 616 906 R9003	-	-	
	Black	C29	1SFA 616 908 R9003	-	-	
III	White	C30	1SFA 616 901 R9028	1SFA 616 902 R9028	-	
	Black	C31	1SFA 616 908 R9028	-	-	
+	White	C32	1SFA 616 901 R9011	1SFA 616 902 R9011	-	
	Green	C33	1SFA 616 906 R9011	-	-	
	Black	C34	1SFA 616 908 R9011	-	-	
-	White	C35	1SFA 616 901 R9012	-	-	
	Red	C36	1SFA 616 904 R9012	-	-	
	Black	C37	1SFA 616 908 R9012	-	-	
↑	White	C38	1SFA 616 901 R9005	1SFA 616 902 R9005	1SFA 616 903 R9005	
	Black	C39	1SFA 616 908 R9005	-	-	
↗	White	C40	1SFA 616 901 R9014	1SFA 616 902 R9014	-	
	Black	C41	1SFA 616 908 R9014	-	-	
↔	White	C42	1SFA 616 901 R9015	1SFA 616 902 R9015	-	
	Black	C43	1SFA 616 908 R9015	-	-	
↕	White	C44	1SFA 616 901 R9016	1SFA 616 902 R9016	-	
	Black	C45	1SFA 616 908 R9016	-	-	
⤵	White	C46	1SFA 616 901 R9017	1SFA 616 902 R9017	-	
	Black	C47	1SFA 616 908 R9017	-	-	
⊕	White	C47	1SFA 616 901 R9018	1SFA 616 902 R9018	-	
	Black	C48	1SFA 616 908 R9018	-	-	
●	White	C49	1SFA 616 901 R9019	1SFA 616 902 R9019	-	
	Black	C50	1SFA 616 908 R9019	-	-	
⊙	White	C51	1SFA 616 901 R9020	1SFA 616 902 R9020	-	
	Black	C52	1SFA 616 908 R9020	-	-	
✋	White	C53	1SFA 616 901 R9021	1SFA 616 902 R9021	-	
	Black	C54	1SFA 616 908 R9021	-	-	
⚡	White	C55	1SFA 616 901 R9022	1SFA 616 902 R9022	-	
	Black	C56	1SFA 616 908 R9022	-	-	
⚡	White	C57	1SFA 616 901 R9023	1SFA 616 902 R9023	-	
	Black	C58	1SFA 616 908 R9023	-	-	
⚡	White	C59	1SFA 616 901 R9024	1SFA 616 902 R9024	-	
	Black	C60	1SFA 616 908 R9024	-	-	
⚡	White	C61	1SFA 616 901 R9025	1SFA 616 902 R9025	-	
	Black	C62	1SFA 616 908 R9025	-	-	
⚡	White	C63	1SFA 616 901 R9026	1SFA 616 902 R9026	-	
	Black	C64	1SFA 616 908 R9026	-	-	
⚡	White	C65	1SFA 616 901 R9027	1SFA 616 902 R9027	-	
	Black	C66	1SFA 616 908 R9027	-	-	

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

② Add suffix code to end of the catalog number.

Signal Towers & beacons



Signal towers K70 Signal beacons KSB



8

Signal towers K70 and Signal beacons KSB offer 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.
- Flashing light elements can be mounted in each module.
- Up to 5 flashing light elements possible.
- High protection rating optical and audible signal elements with IP 54.
- LED elements for long life
- Large variety of different versions
 - Permanent light, 12-240V, AC/DC
 - Blinking light, 24-230V
 - Flashing light, 24-230V
 - Audible 85db continuous or pulsating
 - LED, 24V

Signal beacons KSB

- Large variety of different versions:
 - Permanent light, max. 250V
 - Blinking light, 24V, AC/DC
 - Flashing light, 24-230VAC
 - LED light, 24V, AC/DC
- IP65 for outdoor use
- Available in 5 colors
- High impact polycarbonate
- UL File #175441

Signal towers K70 Description

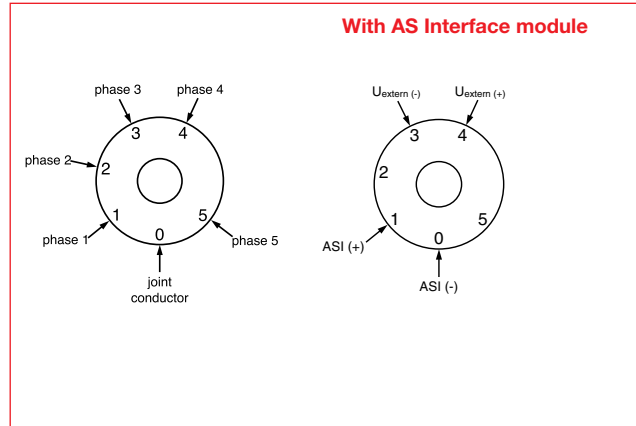
Simple fitting with quick fix system

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).



8

Connection plans

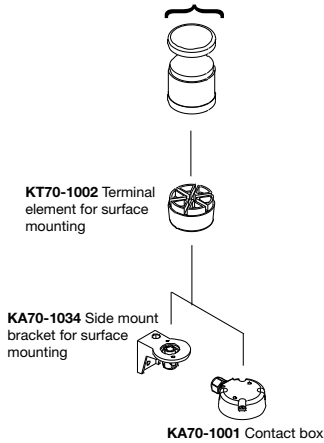


Combination possibilities

Flush mounting

Stackable elements, 5 max

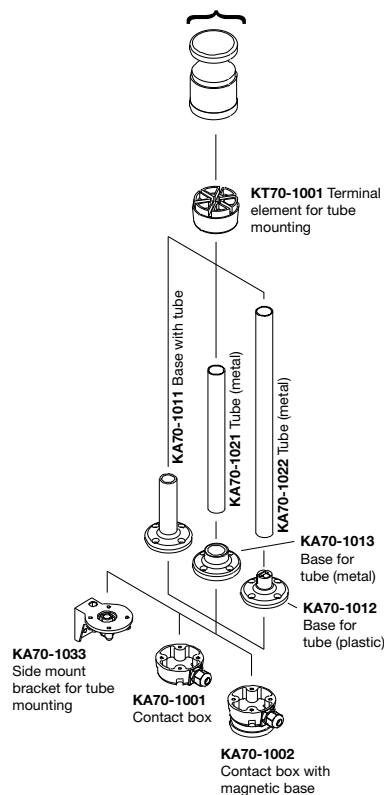
Cap, included with terminal element
KB70/KS70 Audible modules (Buzzer/Siren)
KASI AS-Interface module
KL70 Light element



Tube mounting

Stackable elements, 5 max

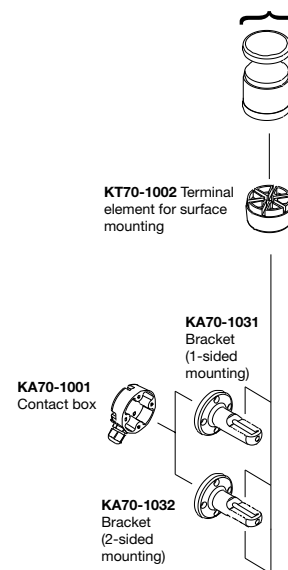
Cap, included with terminal element
KB70/KS70 Audible modules (Buzzer/Siren)
KASI AS-Interface module
KL70 Light element



Side mounting

Stackable elements, 5 max

Cap, included with terminal element
KB70/KS70 Audible modules (Buzzer/Siren)
KASI AS-Interface module
KL70 Light element



Signal towers K70

Pilot Devices
Stacklights &
signal beacons



Optical modules

Description	Catalog No.	Ref. Code	List Price
Light element			
Permanent light , 12-240 V AC/DC. For bulb BA15d. Bulb not included.			
Red	KL70-401R	1SFA 616 070 R4011	\$ 36.00
Green	KL70-401G	1SFA 616 070 R4012	
Yellow	KL70-401Y	1SFA 616 070 R4013	
Blue	KL70-401L	1SFA 616 070 R4014	
Clear	KL70-401C	1SFA 616 070 R4018	
Permanent light , 24 V AC/DC. LED included. Not changeable.			
Red	KL70-305R	1SFA 616 070 R3051	135.00
Green	KL70-305G	1SFA 616 070 R3052	
Yellow	KL70-305Y	1SFA 616 070 R3053	
Blue	KL70-305L	1SFA 616 070 R3054	
White	KL70-305C	1SFA 616 070 R3058	
Blinking light , 24 V AC/DC with integrated LED. Not changeable.			
Red	KL70-306R	1SFA 616 070 R3061	140.00
Green	KL70-306G	1SFA 616 070 R3062	
Yellow	KL70-306Y	1SFA 616 070 R3063	
Blue	KL70-306L	1SFA 616 070 R3064	
Clear	KL70-306C	1SFA 616 070 R3068	
Blinking light , 115 V AC/DC with integrated LED. Not changeable.			
Red	KL70-342R	1SFA 616 070 R3421	140.00
Green	KL70-342G	1SFA 616 070 R3422	
Yellow	KL70-342Y	1SFA 616 070 R3423	
Blue	KL70-342L	1SFA 616 070 R3424	
Clear	KL70-342C	1SFA 616 070 R3428	
Blinking light , 230 V AC/DC with integrated LED. Not changeable.			
Red	KL70-352R	1SFA 616 070 R3521	140.00
Green	KL70-352G	1SFA 616 070 R3522	
Yellow	KL70-352Y	1SFA 616 070 R3523	
Blue	KL70-352L	1SFA 616 070 R3524	
Clear	KL70-352C	1SFA 616 070 R3528	
Flashing light , 24 V DC. Xenon tube included. Not changeable.			
Red	KL70-203R	1SFA 616 070 R2031	165.00
Green	KL70-203G	1SFA 616 070 R2032	
Yellow	KL70-203Y	1SFA 616 070 R2033	
Blue	KL70-203L	1SFA 616 070 R2034	
Clear	KL70-203C	1SFA 616 070 R2038	
Flashing light , 115 V AC. Xenon tube included. Not changeable.			
Red	KL70-113R	1SFA 616 070 R1131	155.00
Green	KL70-113G	1SFA 616 070 R1132	
Yellow	KL70-113Y	1SFA 616 070 R1133	
Blue	KL70-113L	1SFA 616 070 R1134	
Clear	KL70-113C	1SFA 616 070 R1138	
Flashing light , 230 V AC. Xenon tube included. Not changeable.			
Red	KL70-123R	1SFA 616 070 R1231	155.00
Green	KL70-123G	1SFA 616 070 R1232	
Yellow	KL70-123Y	1SFA 616 070 R1233	
Blue	KL70-123L	1SFA 616 070 R1234	
Clear	KL70-123C	1SFA 616 070 R1238	
Rotating light , 24 V AC/DC. LED included. Not changeable.			
Red	KL70-307R	1SFA 616 070 R3071	140.00
Green	KL70-307G	1SFA 616 070 R3072	
Yellow	KL70-307Y	1SFA 616 070 R3073	
Blue	KL70-305L	1SFA 616 070 R3074	
White	KL70-305C	1SFA 616 070 R3078	

Signal towers K70 Accessories

Description	Catalog No.	Ref. Code	List Price
Bulbs Bulb Ba 15d, 42 mm, Max 7 W For permanent or blinking light. 2000 hour life.			
24 V, 5 W, AC/DC	KLB24	1SFA 616 923 R1028	\$ 8.00
115 V, 5 W, AC/DC	KLB1	1SFA 616 923 R1118	
230 V, 5 W, AC/DC	KLB2	1SFA 616 923 R1148	
LED bulbs Ba 15d. For 24 V AC/DC, 40 mA			
Color:			175.00
Red	KA4-1021	1SFA 616 924 R1021	
Green	KA4-1022	1SFA 616 924 R1022	
Yellow	KA4-1023	1SFA 616 924 R1023	
Blue	KA4-1024	1SFA 616 924 R1024	
White	KA4-1025	1SFA 616 924 R1025	
Audible modules			
Buzzer element			
85 dB, continuous or pulsating tone, adjustable, 8mA			95.00
24 V AC/DC	KB70-3001	1SFA 616 071 R3001	
115 V AC/DC	KB70-3101	1SFA 616 071 R3101	
230 V AC	KB70-1201	1SFA 616 071 R1201	115.00
Siren element			
Multi function, 8 diff. tones adjustable, volume adjustable 100 dB, 115 VAC, 40 mA	KS70-1104	1SFA 616 073 R1104	155.00
Multi function, 8 diff. tones adjustable, 40 mA volume adjustable 100 dB, 230 VAC, 40 mA	KS70-1204	1SFA 616 073 R1204	155.00
Multi function, 7 diff. tones adjustable, volume adjustable, remote control 100 dB, 24 VDC, 100 mA	KS70-2004	1SFA 616 073 R2004	145.00
Multi function, 8 diff. tones adjustable, volume adjustable, 100 dB, 24 VAC/DC, 80 mA	KS70-3004	1SFA 616 073 R3004	145.00
Continuous tone alternating 108 dB, 24 VDC, 100 mA	KS70-2002	1SFA 616 073 R2002	100.00
AS-Interface module			
18,5-31,6 VAC/DC for external voltage	KASI-4101	1SFA 616 079 R4101	300.00
Terminal elements			
For tube mounting, including cap	KT70-1001	1SFA 616 075 R1001	40.00
For bracket or base, including cap	KT70-1002	1SFA 616 075 R1002	40.00
Special parts			
Contact box			
Cable exit at side	KA70-1001	1SFA 616 077 R1001	23.00
Magnetic base	KA70-1002	1SFA 616 077 R1002	65.00
Base with tube			
D=25 mm L=110 mm	KA70-1011	1SFA 616 077 R1011	33.00
Base for tube			
D=25 mm, Plastic	KA70-1012	1SFA 616 077 R1012	15.00
D=25 mm, Metal	KA70-1013	1SFA 616 077 R1013	32.00
Tube, anodized aluminum			
D=25 mm L=250 mm	KA70-1021	1SFA 616 077 R1021	20.00
D=25 mm L=400 mm	KA70-1022	1SFA 616 077 R1022	27.00
Bracket			
1-sided mounting	KA70-1031	1SFA 616 077 R1031	20.00
2-sided mounting	KA70-1032	1SFA 616 077 R1032	20.00
For tube mounting	KA70-1033	1SFA 616 077 R1033	20.00
For surface mounting	KA70-1034	1SFA 616 077 R1034	20.00



Signal beacons KSB

Pilot Devices
Stacklights &
signal beacons



Signal beacons KSB

Description	Catalog No.	Ref. Code	List Price
Permanent light , 12-240 V AC/DC. For bulb BA15d. Bulb not included.			
Red	KSB-401R	1SFA 616 080 R4011	\$ 55.00
Green	KSB-401G	1SFA 616 080 R4012	
Yellow	KSB-401Y	1SFA 616 080 R4013	
Blue	KSB-401L	1SFA 616 080 R4014	
Clear	KSB-401C	1SFA 616 080 R4018	
Flashing light , 24 V DC. Xenon tube included. Not changeable.			
Red	KSB-203R	1SFA 616 080 R2031	180.00
Green	KSB-203G	1SFA 616 080 R2032	
Yellow	KSB-203Y	1SFA 616 080 R2033	
Blue	KSB-203L	1SFA 616 080 R2034	
Clear	KSB-203C	1SFA 616 080 R2038	
Flashing light , 115 V AC. Xenon tube included. Not changeable.			
Red	KSB-113R	1SFA 616 080 R1131	155.00
Green	KSB-113G	1SFA 616 080 R1132	
Yellow	KSB-113Y	1SFA 616 080 R1133	
Blue	KSB-113L	1SFA 616 080 R1134	
Clear	KSB-113C	1SFA 616 080 R1138	
Flashing light , 230 V AC. Xenon tube included. Not changeable.			
Red	KSB-123R	1SFA 616 080 R1231	155.00
Green	KSB-123G	1SFA 616 080 R1232	
Yellow	KSB-123Y	1SFA 616 080 R1233	
Blue	KSB-123L	1SFA 616 080 R1234	
Clear	KSB-123C	1SFA 616 080 R1238	
LED Permanent light , 24 V AC/DC. LED included. Not changeable.			
Red	KSB-305R	1SFA 616 080 R3051	190.00
Green	KSB-305G	1SFA 616 080 R3052	
Yellow	KSB-305Y	1SFA 616 080 R3053	
LED Blinking light , 24 V AC/DC. LED included. Not changeable.			
Red	KSB-306R	1SFA 616 080 R3061	195.00
Green	KSB-306G	1SFA 616 080 R3062	
Yellow	KSB-306Y	1SFA 616 080 R3063	
LED Rotating light , 24 V AC/DC. LED included. Not changeable.			
Red	KSB-307R	1SFA 616 080 R3071	195.00
Green	KSB-307G	1SFA 616 080 R3072	
Yellow	KSB-307Y	1SFA 616 080 R3073	
Special parts			
Anti-twist device	KASB-100	1SFA 616 087 R1000	8.00
Bulbs for signal beacons Max 10 W. For permanent light, 2,000 hour life.			
Bulb Ba15d, 52 mm:			8.00
12 V, 7 W, AC/DC	1SFA 616 922 R1018	1SFA 616 922 R1018	
24 V, 7 W, AC/DC	1SFA 616 922 R1028	1SFA 616 922 R1028	
115 V, 7 W, AC/DC	1SFA 616 922 R1118	1SFA 616 922 R1118	
220-260 V, 7-10 W, AC/DC	1SFA 616 922 R1148	1SFA 616 922 R1148	



Technical data

Signal Towers K70

Signal Beacons KSB

Signal Towers K70

Approvals



Technical specifications

Housing and accessories	Polyamide, high impact, black
Dome	Polycarbonate, transparent
Fixing	Base mounting Tube mounting, for tube ø 25 mm Bracket mounting
Socket	B 15 d, for bulb max. 7W
8 Connection	Screwable connection up to 2.5 mm ²
Number of modules possible	max. 5
2-sided bracket	max. 10 elements

Degrees of protection

Light elements	IP 54 UL Type 5
Audible elements	IP 54 UL Type 5

Electrical data

Permanent light element	12 - 240 V AC/DC		
Bulb socket B 15 d, max 7 W	Bulb not included		
Blinking light element	<u>24 V</u>	<u>115 V</u>	<u>230 V</u>
	AC/DC	AC/DC	AC/DC
	Bulb not included		
Starting current	< 0.5 A		
Flashing light element	<u>24 V</u>	<u>115 V</u>	<u>230 V</u>
	DC	AC	AC
Flash frequency	1 Hz	1 Hz	1 Hz
Flash energy	2 Ws	2 Ws	2 Ws
Life duration	4 x 10 ⁶ flashes		
Current consumption	125 mA	20 mA	35 mA
reduced for AS-Interface	80 mA		
Starting current	< 0.5 A at 24 V		
LED Permanent light element	<u>24 V</u>		
	AC/DC		
Current consumption	45 mA		
Starting current	< 0.5 A at 24 V		
LED Blinking light element	<u>24 V</u>		
	AC/DC		
Current consumption	25 mA		
Starting current	< 0.5 A at 24 V		
Blink frequency	c. 1 Hz	c. 1 Hz	c. 1 Hz
LED Rotating light element	24 V, AC/DC		
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



Technical specifications

Housing and accessories	PC/ABS-Blend, high impact, black
Dome	Polycarbonate, transparent
Fixing	Installation mounting for ø 37 mm (PG 29)
Bulb socket	B 15 d, max. 10 W
Bulb change	via rear access with bayonet mechanism (Bulb not included)
Connection	Screwable connection max. 2.5 mm ²

Degrees of protection

IP 65 UL Type 5

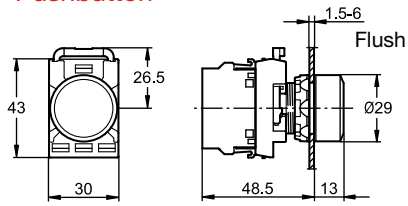
Electrical data

Permanent light element			
Operating voltage	max. 250 V		
Bulb socket B 15 d, max 10 W	Bulb not included		
LED version:			
Permanent light	24 V, AC/DC		
Current consumption	45 mA		
Blinking light element	24 V, AC/DC		
Current consumption	25 mA		
Rotating light element	24 V, AC/DC		
Current consumption	70 mA		
Starting current	< 0.5 A		
Flashing light element			
Operating voltage	<u>24 V</u>	<u>115 V</u>	<u>230 V</u>
	AC/DC	AC	AC
Flash frequency	1 Hz	1 Hz	1 Hz
Flash energy	2 Ws	2 Ws	2 Ws
Life duration	4 x 10 ⁶ flashes		
Current consumption	125 mA	20 mA	35 mA
Starting current	< 0.5 A	< 0.5 A	< 0.25 A
Temperature			
Ambient temperature during operations	-20 to +50 °C		

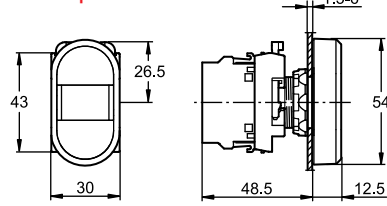
Approximate dimensions Modular range

All dimensions in MM

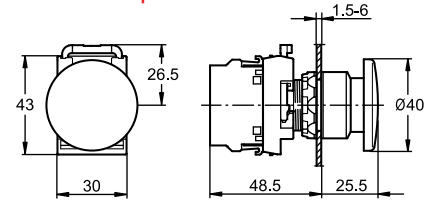
Pushbutton



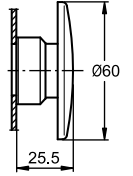
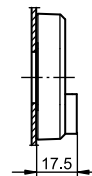
Double pushbutton



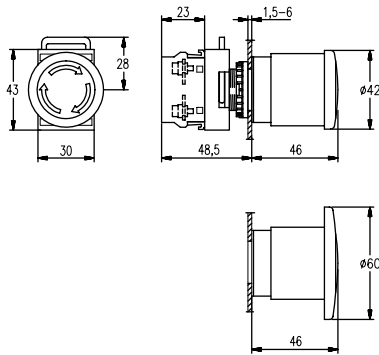
Mushroom pushbutton



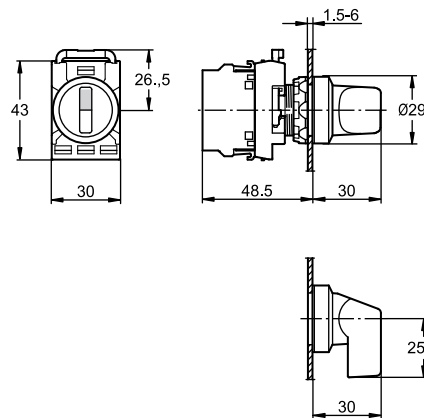
Extended



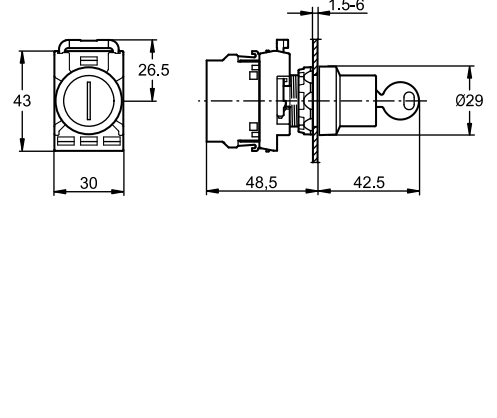
Emergency stop pushbutton, Illuminated & non-illuminated



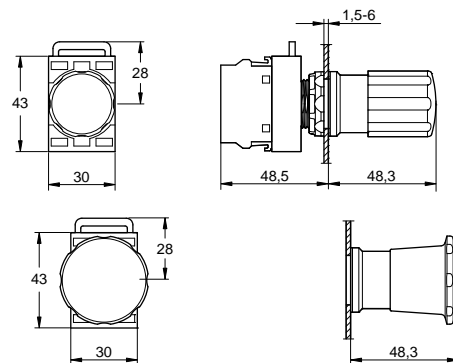
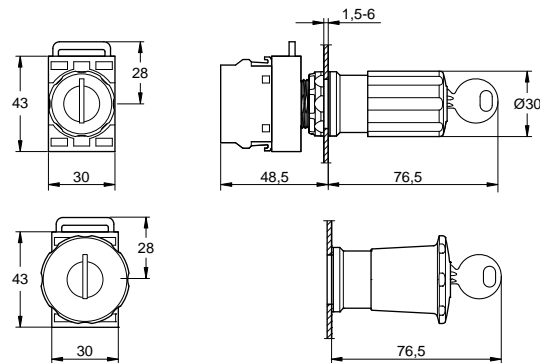
Selector switch



Key-operated selector switch



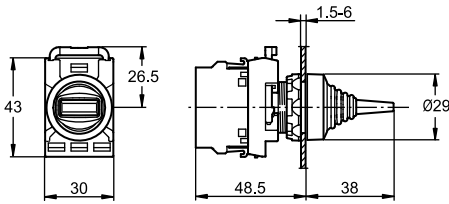
Emergency stop pushbutton, 30mm & 40mm



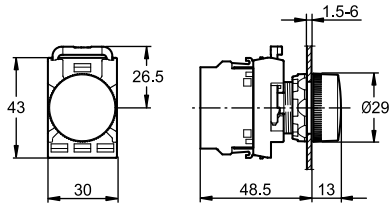
Approximate dimensions and drilling plans Modular range

All dimensions in MM

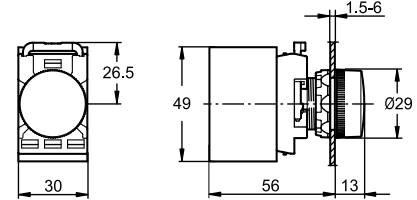
Toggle switch



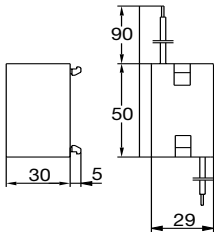
Pilot light



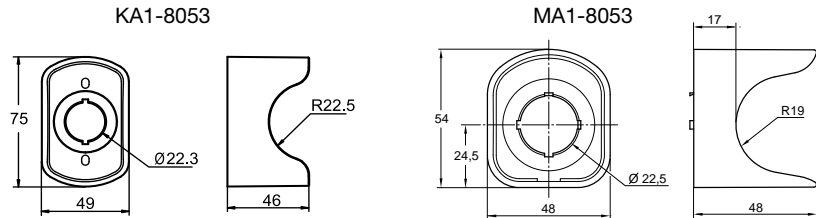
Pilot light with transformer



Transformer block

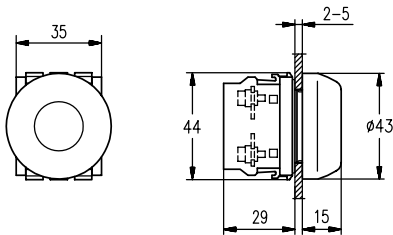


Emergency stop shroud

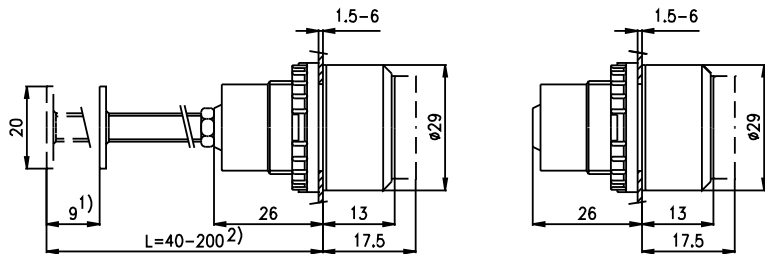


8

Definite purpose pushbutton

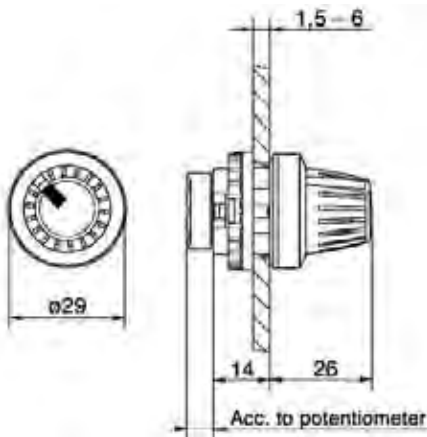


Reset pushbutton

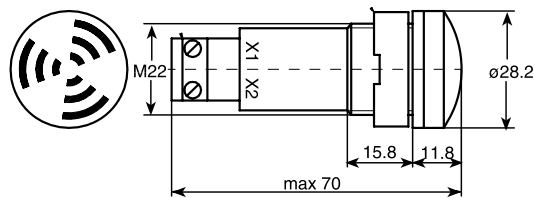


- ¹⁾ Length of stroke.
- ²⁾ Can be cut to desired length.

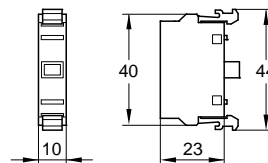
Potentiometer



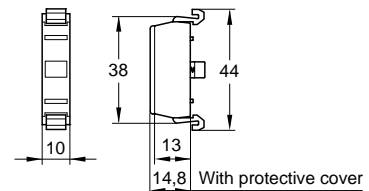
Buzzer



Standard contact block



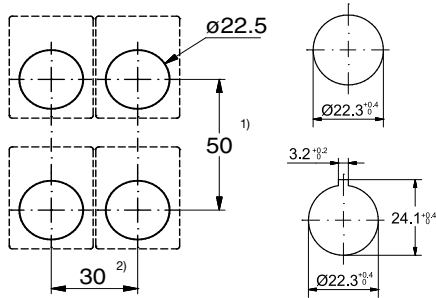
Micro contact block



Approximate dimensions and drilling plans Modular range

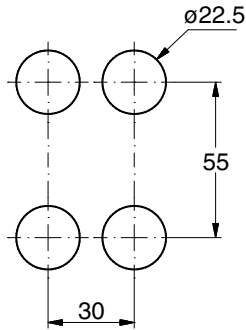
All dimensions in MM

Drilling plans for pushbuttons, switches and pilot lights

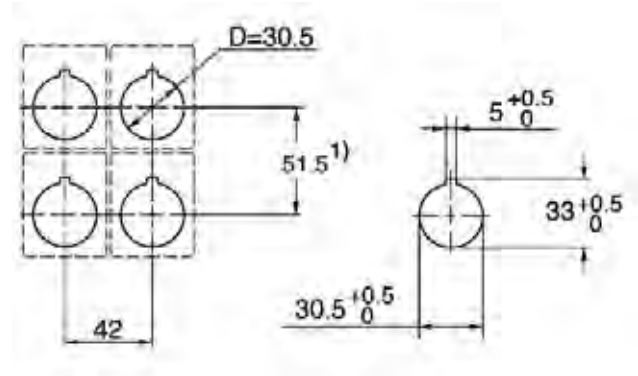


- 1) 55 mm when legend plate H= 44.5 mm is used.
61 mm for mushroom pushbutton with D=60 mm
- 2) 37 mm when legend plate with insert is used,

Drilling plan for double pushbutton



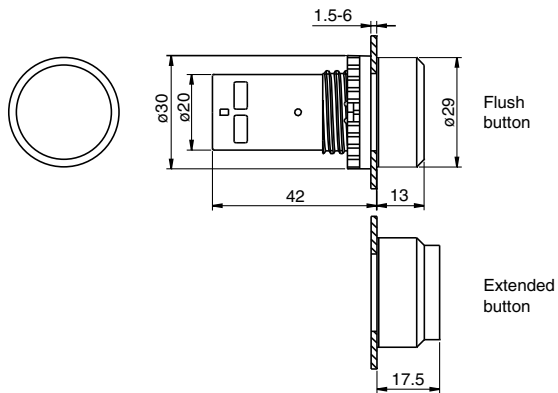
Drilling plan for 30 mm adaptor



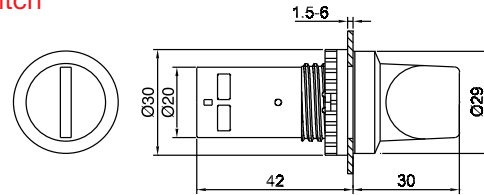
Approximate dimensions Compact range

All dimensions in MM

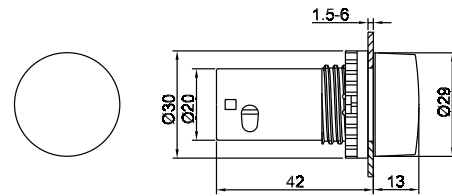
Pushbutton



Selector switch



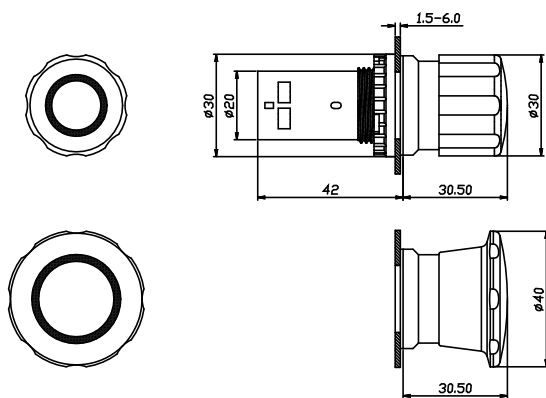
Pilot light



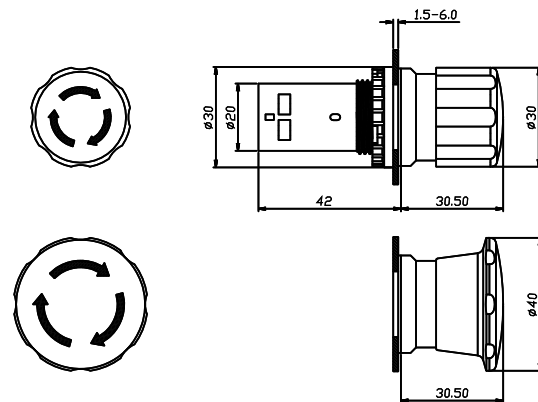
8

Emergency stop pushbuttons

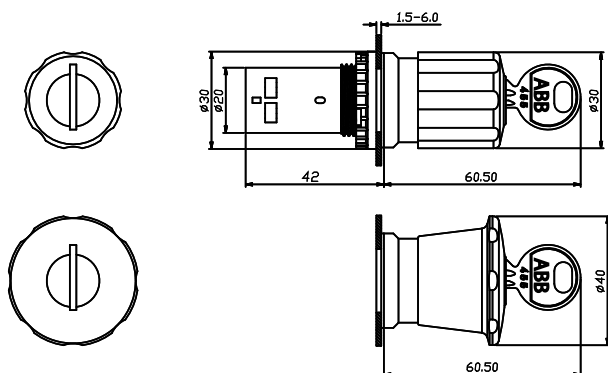
CE3P/CE4P (Pull release)



CE3T/CE4T (Twist release)



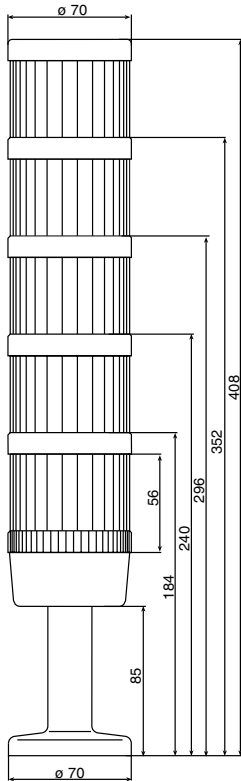
CE3K1/CE4K1



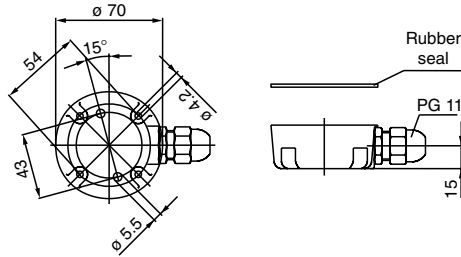
Approximate dimensions and drilling plans Signal Towers/Signal Beacons

All dimensions in MM

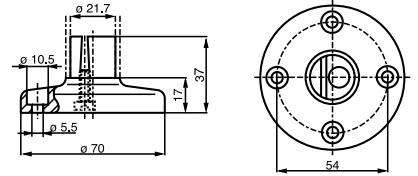
Signal Towers K 70



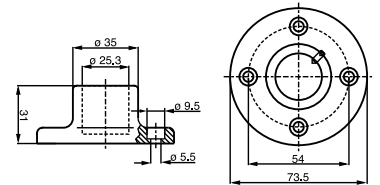
Contact box for cable exit at side



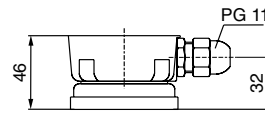
Base for tube, plastic



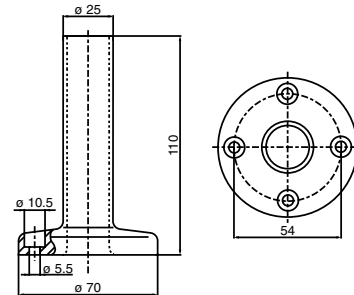
Base for tube, metal



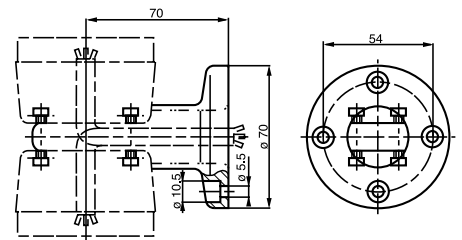
Contact box with magnetic base



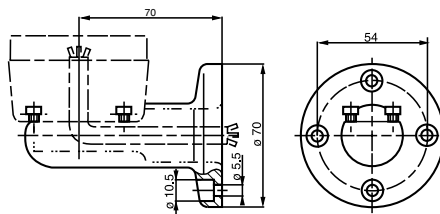
Base with integrated tube



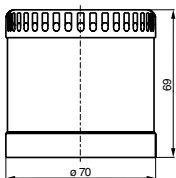
Bracket 2-sided mounting



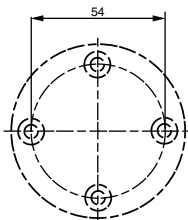
Bracket 1-sided mounting



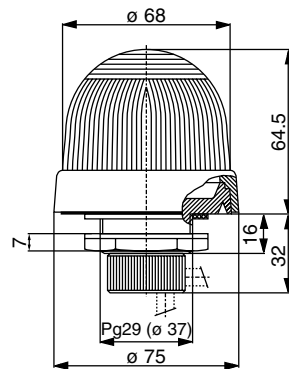
Audible module



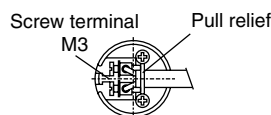
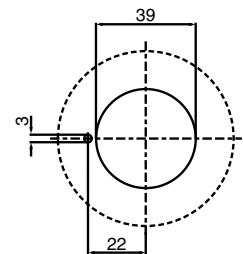
Drilling plan for Signal Towers K 70



Signal Beacons K SB

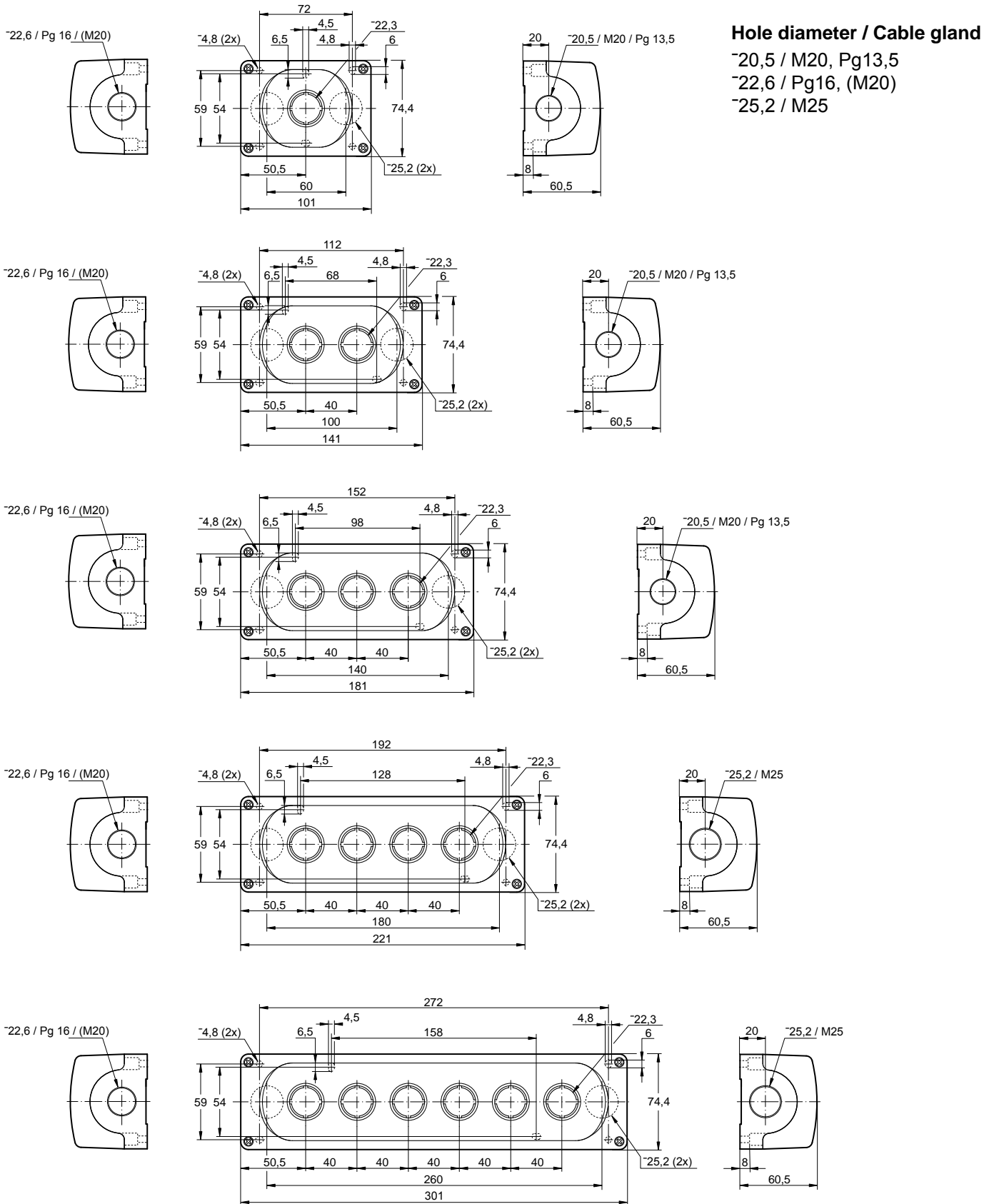


Drilling plan for Signal Beacons KSB



Approximate dimensions Enclosures

All dimensions in MM



Color selection according to IEC 60204-1

IEC 60204-1 specifies coding principles for indicators and actuators and gives recommendation regarding the use of colors. An excerpt from the standard is given below. For detailed information, see the standard.

Meaning of colors – General principles

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

Non-illuminated actuators

Emergency actuators

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

STOP / OFF actuators

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

START / ON actuators

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

Use of **WHITE** and **BLACK** for specific meanings

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

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

WHITE, GREY and **BLACK** are the preferred colors for actuators which, when actuated several times, act alternately as a START / ON and STOP / OFF actuator.

The colors **YELLOW** and **GREEN** shall not be used. The color **RED** shall be used only in cases where the same actuator, other than a push-button, is used for both EMERGENCYSTOP / OFF and normal operation.

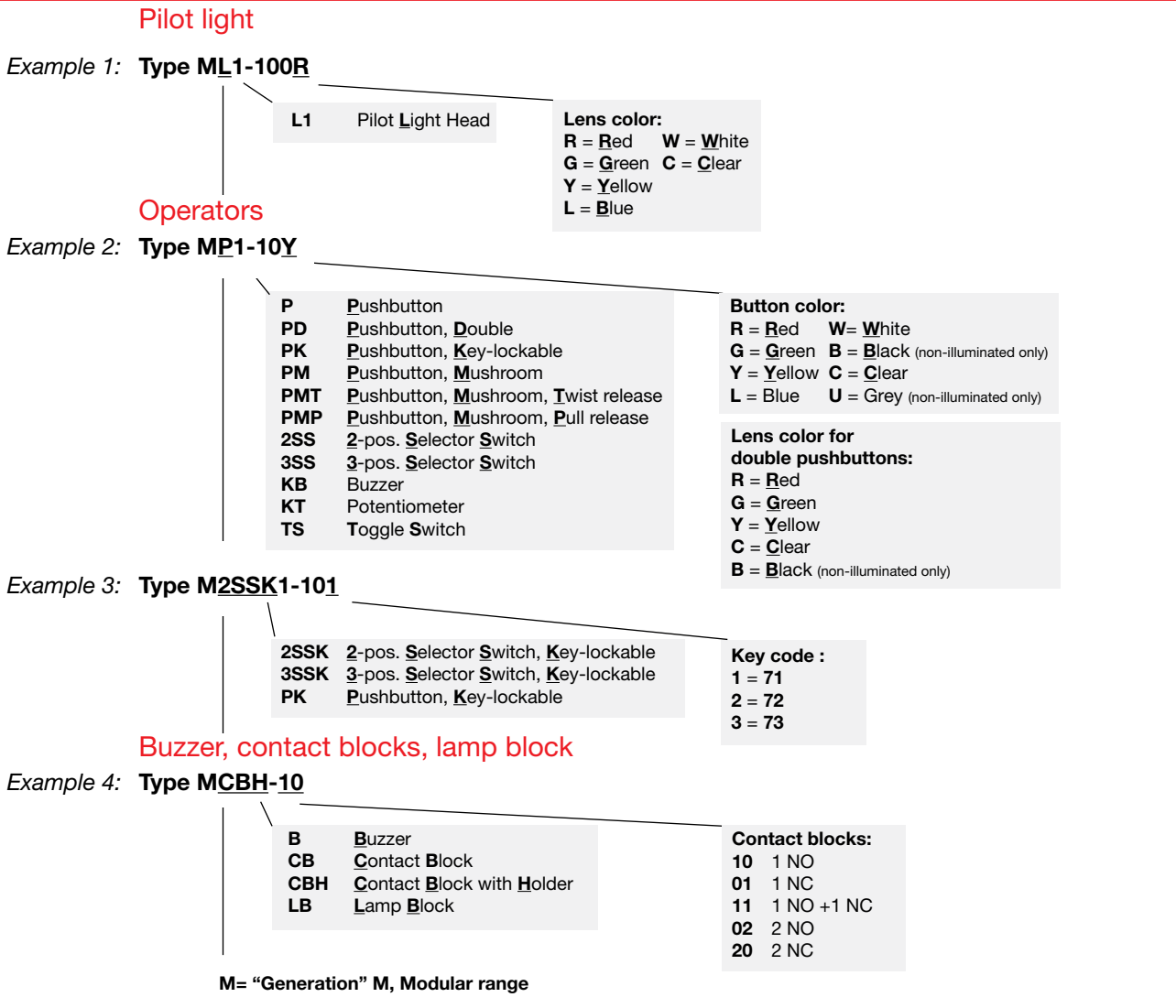
WHITE, GREY and **BLACK** are preferred colors for actuators which cause a movement while they are actuated and stop the movement when they are released (such as inching or jogging actuators). **GREEN** is also permitted. **RED** shall not be used.

RESET actuators

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

Catalog number explanation

Modular pilot devices



Compact pilot devices

