

30mm Pilot Devices



ABB 30mm Pilot Devices – Versatility in Design

The main advantage of using ABB pilot devices is versatility. Our products are ideally designed to be the perfect choice for both 22mm and 30mm applications. Adaptor rings provide the hardness of a 30mm device, while eliminating the need to double-stock inventory in order to have both 22mm and 30mm products. One part plays the role of both 22mm and 30mm operator.



30mm Pilot Devices

ABB Pilot Devices are part of the comprehensive ABB program of high quality Low Voltage Products and Systems for buildings, industries, and OEMs. Our products meet all essential national and international standards, including UL, CSA, IEC, etc.

ABB offers a complete range of pilot devices for 30mm applications:

- emergency-stop and mushroom pushbuttons
- toggle, selector, and key-operated switches
- double pushbuttons
- pilot lights
- press-to-test lights
- UL Type 1, 3R, 4, 4X, 12, & 13

These products are available trimmed in either a black high-impact polycarbonate material or resilient chrome metal.

Aesthetic, Functional, and Flexible

The pilot devices have an aesthetic and functional design that withstands even the toughest environment. No additional protective boot is needed.

The contacts provide a wiping action. The tips of the contacts rub against each other each time the contacts close. This forces dust and oxide to the side, providing a highly reliable electrical circuit. The NC block has a positive opening for high performance in safety circuits.

Modular Range Pilot Devices

The Modular range is known world-wide for its flexibility and durability. By combining a few basic components, a large number of different devices can be acquired. The main benefits of the Modular pilot devices are:

- They can be used in *tough environments*
- They have *large text and push areas*
- *Up to six contact blocks* available on one actuator
- *Easy* to mount and to wire

Compact Range Pilot Devices

The Compact range was designed with efficiency in mind. One single part includes all necessary components for a pilot device.

The main benefits of the Compact pilot devices are:

- They can be used in *tough environments*
- *One single part number* specifies operator and contacts
- Extremely compact, *low built-in depth*
- *Cost-effective* solution

Quick and Easy Installation

- Spring-loaded tabs ensure that actuators and legend plates are in the correct positions
- The same actuator can be used in both 22mm notched or round holes
- Contact/lamp blocks, holders, and devices utilize a “snap together” design, eliminating

**General information**

Alphanumeric	II - III
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Modular Range

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30mm Pilot devices



30mm Pilot Devices Modular range



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# E57057
- 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

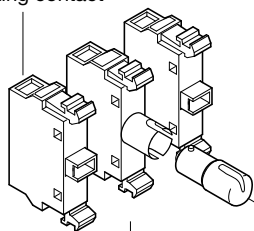
General information

Mounting

Exploded view

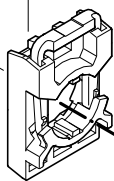
Contact block

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.

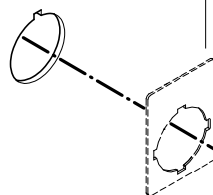


Nut



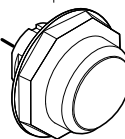
Legend plates

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



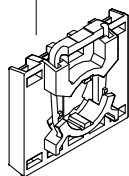
Operator

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



Lamp block

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

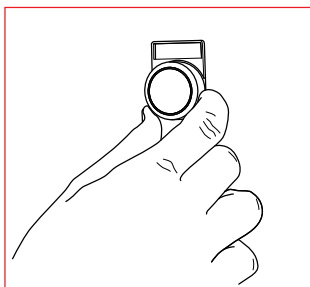


Five block holder

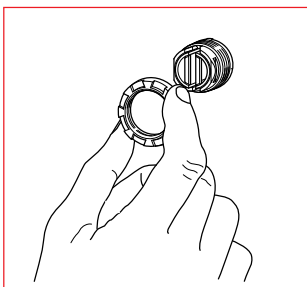
Bezels

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

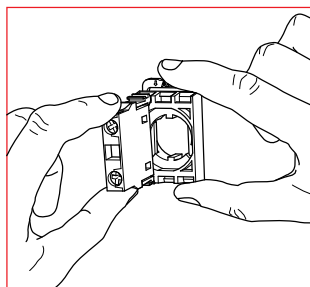
Easy to mount



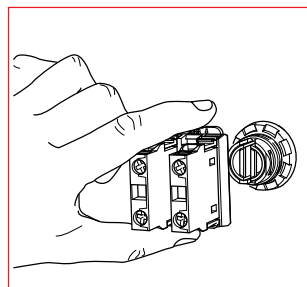
The operator is to be inserted from the front.....



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

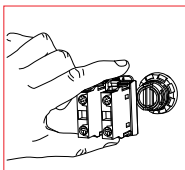
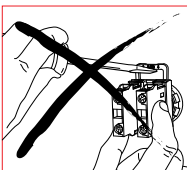


The contact blocks/lamp block are then snapped on to the holder...



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

...and to remove

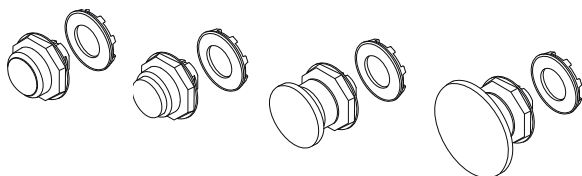


Press down the spring on the holder and pull the holder from the actuator.

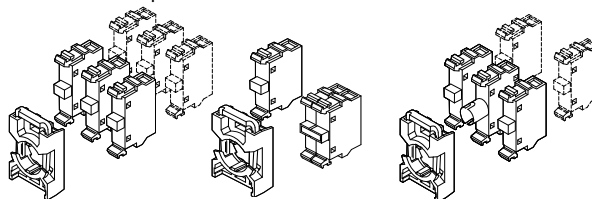
Selection Guide

Pilot Devices
Modular Range

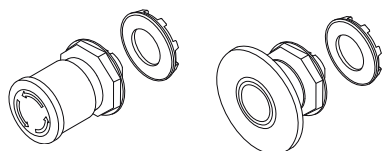
Pushbuttons and Mushroom pushbuttons



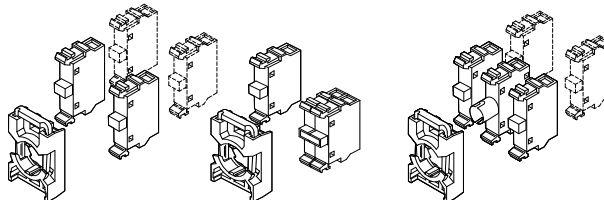
Contact block/lamp block combinations



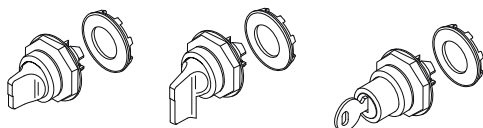
Emergency stop pushbuttons



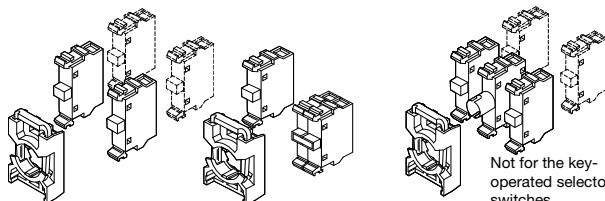
Contact block/lamp block combinations



Selector switches

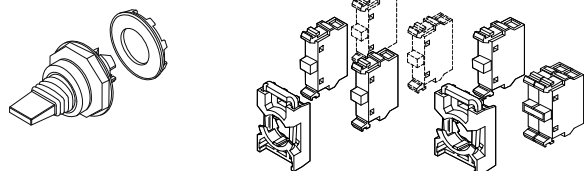


Contact block/lamp block combinations

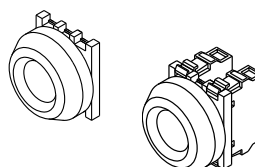


Toggle switches

Contact block combinations

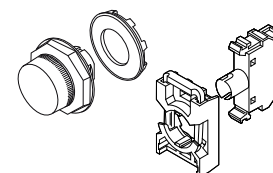


Definite purpose push-buttons



Pilot lights

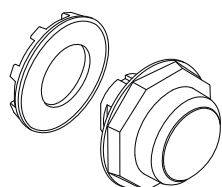
Lamp block combination



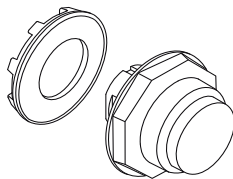
Flush and extended pushbuttons

Non-illuminated and illuminated

Momentary and maintained



Flush



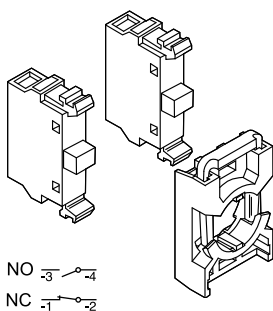
Extended

■ Non-illuminated
button color

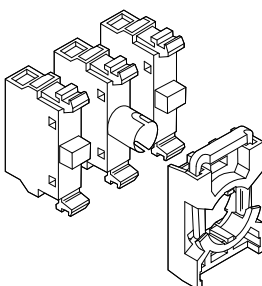
R Red
G Green
Y Yellow
L Blue
W White
B Black
C Clear

□ Illuminated
button color

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



NO 3-4
NC 1-2



Non-illuminated

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

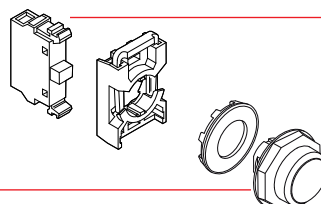
Contact blocks, lamp block and holder^②

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



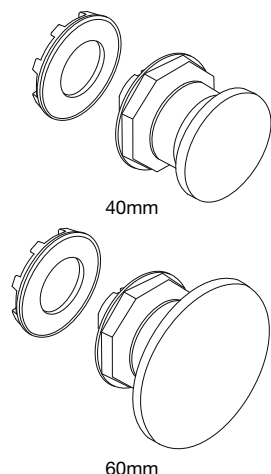
^① No contact block in the center position.

^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

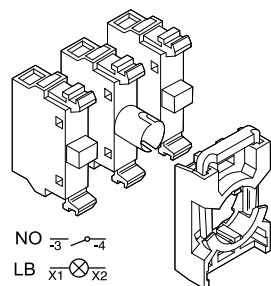
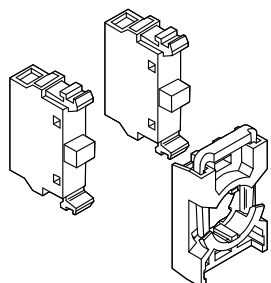


■ Non-illuminated
button color

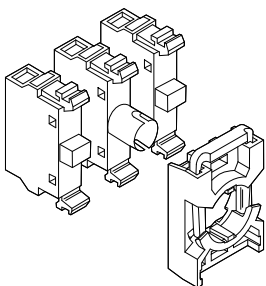
R Red
Y Yellow
B Black

□ Illuminated
button color

R Red
Y Yellow
G Green



NO 3-4
LB X1 X2
NC 1-2



Non-illuminated

Description	Catalog number	List price
Black plastic bezel		
40mm	G1MPM1-10 ■	\$ 24.00
60mm	G1MPM2-10 ■	28.00
Chrome bezel		
40mm	G2MPM1-30 ■	26.00
60mm	G2MPM2-30 ■	30.00

Illuminated^①

Description	Catalog number	List price
Black plastic bezel		
40mm	G1MPM1-11 □	\$ 24.00
60mm	G1MPM2-11 □	28.00
Chrome bezel		
40mm	G2MPM1-31 □	26.00
60mm	G2MPM2-31 □	30.00

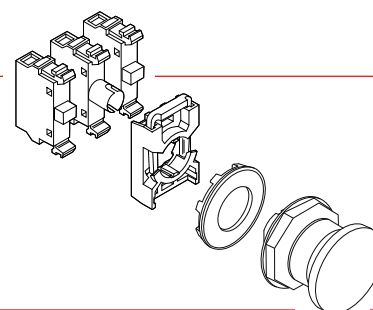
Contact blocks, lamp block and holder^②

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 ^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

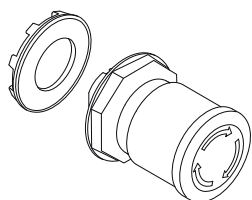


^① No contact block in the center position

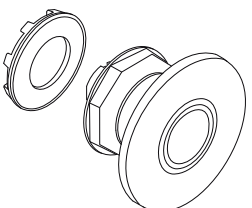
^② Lamp block MLB-1. Bulb not included. Other lamp block see Accessories, bulb max 1.2 W.

Emergency stop pushbuttons Non-illuminated and illuminated

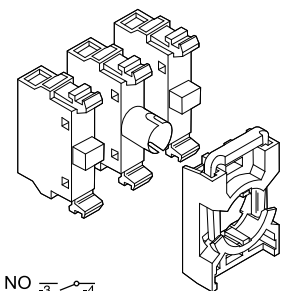
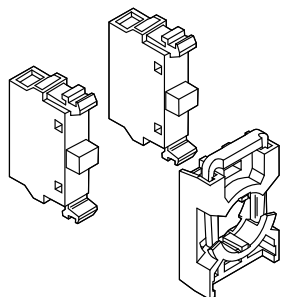
Fulfills IEC 60947-5-5



40mm



60mm



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

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:

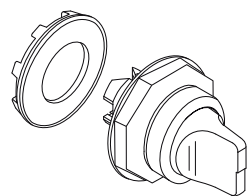
Durability test	6,050 cycles. This is not a test of mechanical life. The product has a mechanical life of 100,000 operations.	Latching test	Impulse voltage test at 2,500 V
Robustness	The force 113 N applied in three axes	Resetting test	Pulling force < 50 N Turning torque < 1 Nm
Conditioning	Heat and 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

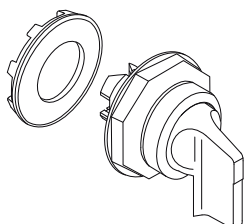
② Lamp block MLB-1. Bulb not included. Other lamp block see Accessories, bulb max 2 W.

Two-position selector switches

Non-illuminated



Short handle



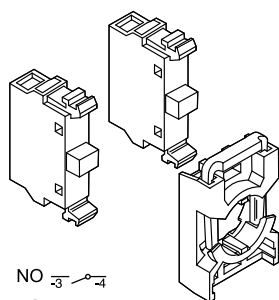
Long handle

■ Switch color R Red
 B Black
 U Grey

Maintained



Maintained


Momentary,
spring return
from C to B


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

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	G1M2SS1-10 ■	\$ 19.00
Maintained A & C	G1M2SS2-10 ■	19.00
Spring return from C to B	G1M2SS3-10 ■	22.00
Chrome bezel		
Maintained B & C	G2M2SS1-30 ■	21.00
Maintained A & C	G2M2SS2-30 ■	21.00
Spring return from C to B	G2M2SS3-30 ■	24.00
Long handle		
Black plastic bezel		
Maintained B & C	G1M2SS4-10 ■	19.00
Maintained A & C	G1M2SS5-10 ■	19.00
Spring return from C to B	G1M2SS6-10 ■	22.00
Chrome bezel		
Maintained B & C	G2M2SS4-30 ■	21.00
Maintained A & C	G2M2SS5-30 ■	21.00
Spring return from C to B	G2M2SS6-30 ■	24.00

Contact blocks and holder

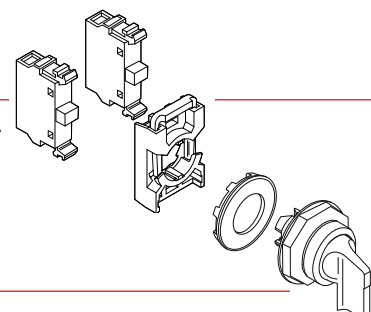
Blocks	Catalog number	Ref. code	List price
1 NO with holder	MCBH-10	1SFA 611 605 R1101	\$ 10.00
1 NC with holder	MCBH-01	1SFA 611 605 R1110	10.00
2 NO with holder	MCBH-20	1SFA 611 605 R1102	18.00
2 NC with holder	MCBH-02	1SFA 611 605 R1120	18.00
1 NO + 1 NC with holder	MCBH-11	1SFA 611 605 R1111	18.00
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

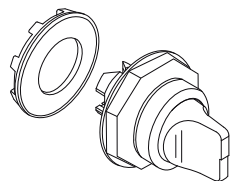
Requested: A non-illuminated modular selector switch. Black.

Maintained.
Handle positions: A and C
With 2 NC contacts

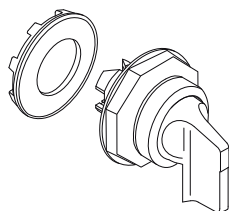
Ref.: 1 piece of G1M2SS2-40B + 1 piece of MCBH-02



Two-position selector switches Illuminated



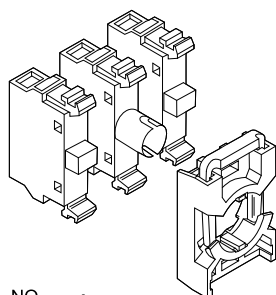
Short handle



Long handle

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

Maintained	Maintained
Momentary, spring return from C to B	



NO
LB
NC

Illuminated^①

Description	Catalog number	List price
Short handle		
Black plastic bezel		
Maintained B & C	G1M2SS1-11 ■	\$ 25.00
Maintained A & C	G1M2SS2-11 ■	25.00
Spring return from C to B	G1M2SS3-11 ■	34.00
Chrome bezel		
Maintained B & C	G2M2SS1-31 ■	27.00
Maintained A & C	G2M2SS2-31 ■	27.00
Spring return from C to B	G2M2SS3-31 ■	36.00
Long handle		
Black plastic bezel		
Maintained B & C	G1M2SS4-11 ■	25.00
Maintained A & C	G1M2SS5-11 ■	25.00
Spring return from C to B	G1M2SS6-11 ■	34.00
Chrome bezel		
Maintained B & C	G2M2SS4-31 ■	27.00
Maintained A & C	G2M2SS5-31 ■	27.00
Spring return from C to B	G2M2SS6-31 ■	36.00

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 7

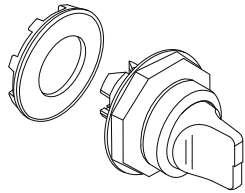
Ordering example See Page 7

^① No contact block in the center position

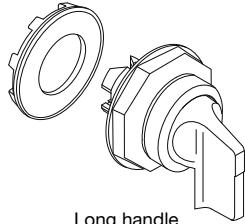
^② Lamp block MLB-1. Bulb not included. Other lamp block see Accessories, bulb max 1.2 W.

Three-position selector switches Non-illuminated

Pilot Devices
Modular Range

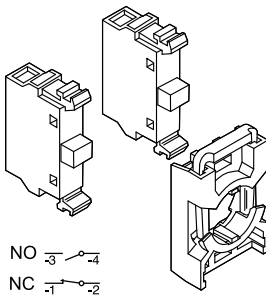
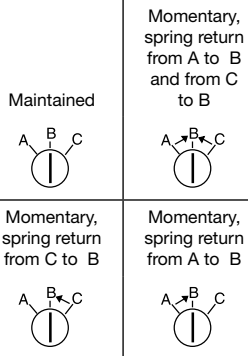


Short handle



Long handle

■ Switch color R Red
 B Black
 U Grey



Contact functions

Block positions as seen from operator front.

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

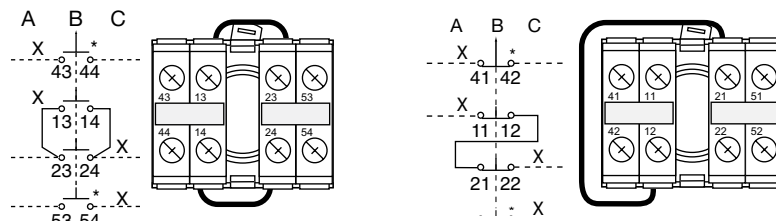
Non-illuminated

Description	Catalog number	List price
Short handle		
Black plastic bezel		
Maintained A, B & C	G1M3SS1-10 ■	\$ 19.00
Spring return A & C to B	G1M3SS2-10 ■	22.00
Maint A, Spring ret C to B	G1M3SS3-10 ■	22.00
Maint C, Spring ret A to B	G1M3SS7-10 ■	22.00
Chrome bezel		
Maintained A, B & C	G2M3SS1-30 ■	21.00
Spring return A & C to B	G2M3SS2-30 ■	24.00
Maint A, Spring ret C to B	G2M3SS3-30 ■	24.00
Maint C, Spring ret A to B	G2M3SS7-30 ■	24.00
Long handle		
Black plastic bezel		
Maintained A, B & C	G1M3SS4-10 ■	19.00
Spring return A & C to B	G1M3SS5-10 ■	22.00
Maint A, Spring ret C to B	G1M3SS6-10 ■	22.00
Maint C, Spring ret A to B	G1M3SS8-10 ■	22.00
Chrome bezel		
Maintained A, B & C	G2M3SS4-30 ■	21.00
Spring return A & C to B	G2M3SS5-30 ■	24.00
Maint A, Spring ret C to B	G2M3SS6-30 ■	24.00
Maint C, Spring ret A to B	G2M3SS8-30 ■	24.00

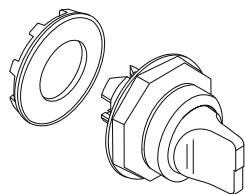
Contact blocks and holder

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

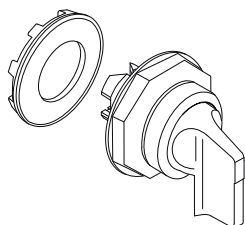
Center position connection detail



Three-position selector switches Illuminated



Short handle



Long handle

■ 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



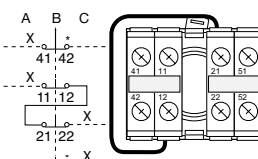
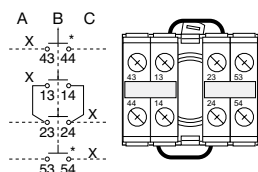
Momentary,
spring return
from C to B



Momentary,
spring return
from A to B



Center position connection detail



Illuminated^①

Description	Catalog number	List price
Short handle		
Black plastic bezel		
Maintained A, B & C	G1M3SS1-11 ■	\$ 25.00
Spring return A & C to B	G1M3SS2-11 ■	34.00
Maint A, Spring ret C to B	G1M3SS3-11 ■	34.00
Maint C, Spring ret A to B	G1M3SS7-11 ■	34.00
Chrome bezel		
Maintained A, B & C	G2M3SS1-31 ■	27.00
Spring return A & C to B	G2M3SS2-31 ■	36.00
Maint A, Spring ret C to B	G2M3SS3-31 ■	36.00
Maint C, Spring ret A to B	G2M3SS7-31 ■	36.00
Long handle		
Black plastic bezel		
Maintained A, B & C	G1M3SS4-11 ■	25.00
Spring return A & C to B	G1M3SS5-11 ■	34.00
Maint A, Spring ret C to B	G1M3SS6-11 ■	34.00
Maint C, Spring ret A to B	G1M3SS8-11 ■	34.00
Chrome bezel		
Maintained A, B & C	G2M3SS4-31 ■	27.00
Spring return A & C to B	G2M3SS5-31 ■	36.00
Maint A, Spring ret C to B	G2M3SS6-31 ■	36.00
Maint C, Spring ret A to B	G2M3SS8-31 ■	36.00

Contact blocks, lamp block and holder See Page 8

Contact functions See Page 9

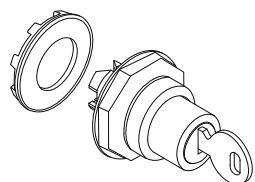
Ordering example See Page 7

^① No contact block in the center position

Key-operated selector switches^①

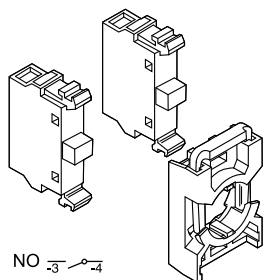
Two and three positions

Pilot Devices
Modular Range



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

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



NO

NC

Description	The key can be removed in...	Catalog number	List price
Two-position			
Black plastic bezel			
Maintained B & C	B & C	G1M2SSK1-10 ■	\$ 49.00
Maintained B & C	B only	G1M2SSK2-10 ■	49.00
Spring return C to B	B only	G1M2SSK3-10 ■	49.00
Chrome bezel			
Maintained B & C	B & C	G2M2SSK1-30 ■	51.00
Maintained B & C	B only	G2M2SSK2-30 ■	51.00
Spring return C to B	B only	G2M2SSK3-30 ■	51.00
Three-position			
Black plastic bezel			
Maintained A, B, & C	A, B & C	G1M3SSK1-10 ■	61.00
Maintained A, B, & C	B only	G1M3SSK2-10 ■	61.00
Spring return A & C to B	B only	G1M3SSK3-10 ■	61.00
Spring return C to B	A only	G1M3SSK4-10 ■	61.00
Spring return C to B	A, B, & C	G1M3SSK5-10 ■	61.00
Chrome bezel			
Maintained A, B, & C	A, B & C	G2M3SSK1-30 ■	63.00
Maintained A, B, & C	B only	G2M3SSK2-30 ■	63.00
Spring return A & C to B	B only	G2M3SSK3-30 ■	63.00
Spring return C to B	A only	G2M3SSK4-30 ■	63.00
Spring return C to B	A, B, & C	G2M3SSK5-30 ■	63.00

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

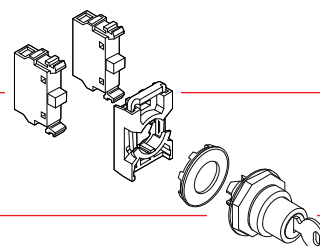
Two positions: See Page 9

Three positions: See Page 9

Ordering example

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

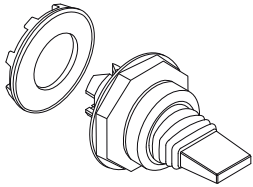
Ref.: 1 piece of G1M3SSK2-402 + 1 piece of MCBH-02



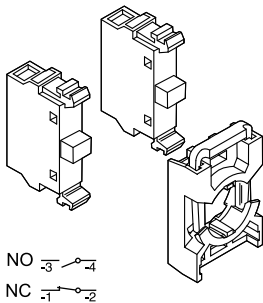
^① Includes two keys

Toggle switches

Two and three positions



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



Description	Catalog number	List price
Two-position		
Maintained, black bezel	G1MTS1-10B	\$ 26.00
Maintained, chrome bezel	G2MTS1-30B	28.00
Three-position		
Maintained, black bezel	G1MTS3-10B	26.00
Maintained, chrome bezel	G2MTS3-30B	28.00
Spring return from A and C to B, black bezel	G1MTS2-10B	26.00
Spring return from A and C to B, chrome bezel	G2MTS2-30B	28.00

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

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

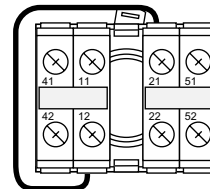
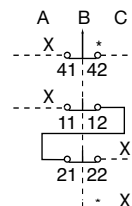
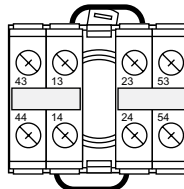
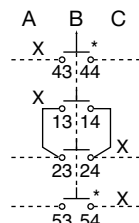
O = not actuated (normal state)
x = actuated (state changed)

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)

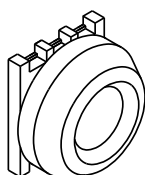
Center position connection detail



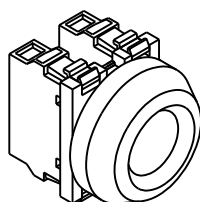
Definite purpose pushbuttons

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

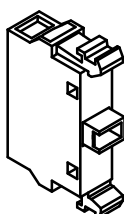
Pilot Devices
Modular Range



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	1SFA 616 105 R4076	1SFA 616 105 R4076	\$ 45.00
1 NO	Black	1SFA 616 105 R4016	1SFA 616 105 R4016	37.00
1 NC	Black	1SFA 616 105 R4046	1SFA 616 105 R4046	37.00
2 NO	Black	1SFA 616 105 R4026	1SFA 616 105 R4026	45.00
2 NC	Black	1SFA 616 105 R4056	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	

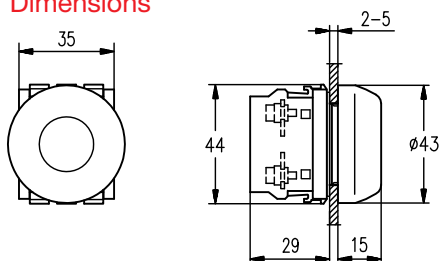
Accessories

Description	Catalog number ①	Ref. code	List price
Guide washer for positioning and anti rotation	2154 373-1	2154 373-1	\$ 3.00

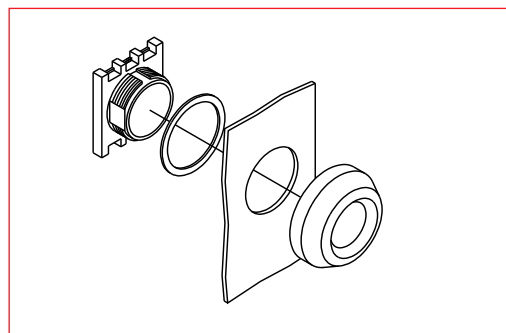
Technical data

Degree of protection	IP66
Ambient temperature	-30° ...+70°

Dimensions

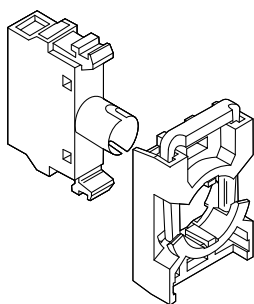
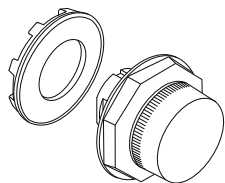


Mounting



① IP66 Rating only.

Pilot lights



Lamp block + holder



Diffusing lens

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

Description

Black plastic mounting ring
Chrome mounting ring

Catalog number

G1ML1-100 ■
G2ML1-100 ■

List price

\$ 12.50
14.50

Lamp blocks with holder ①

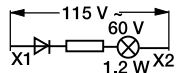
Supply voltage

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



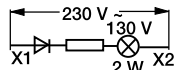
115 V AC supply voltage.

**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

MCBH-002

MCBH-003

Ref. code

1SFA 611 605 R1200

1SFA 611 605 R1300

1SFA 611 605 R1400

List price

\$ 19.50

23.50

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

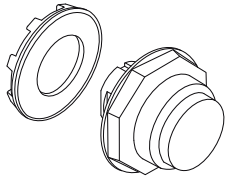
\$ 3.00

① Bulb not included. See page 18

Press-to-test pilot light pushbuttons

Momentary

Pilot Devices
Modular Range

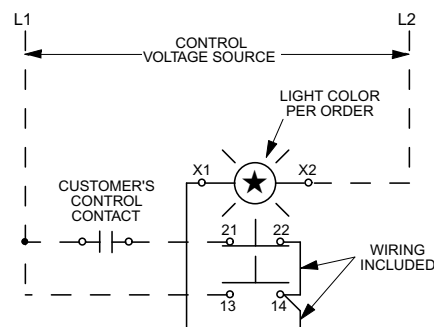


- Button type 1 Flush
 3 Extended
- Lens color R Red
 G Green
 Y Yellow
 L Blue
 W White
 C Clear

Complete device: 1No+1NC, lamp block, and bulb
Light diffusing lens not included

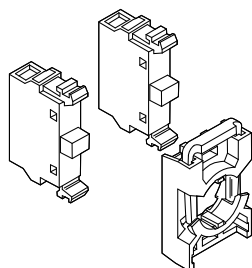
Description	Voltage type	Catalog number	List price	
Full voltage type				
Black plastic bezel	6V	G1MP □ -KLFPT6 ■	\$ 55.60	
	12V	G1MP □ -KLFPT7 ■	55.60	
	24V	G1MP □ -KLFPT8 ■	55.60	
	48V	G1MP □ -KLFPT9 ■	55.60	
	120V	G1MP □ -KLFPT1 ■	55.60	
Chrome bezel	6V	G2MP □ -MLFPT6 ■	57.60	
	12V	G2MP □ -MLFPT7 ■	57.60	
	24V	G2MP □ -MLFPT8 ■	57.60	
	48V	G2MP □ -MLFPT9 ■	57.60	
	120V	G2MP □ -MLFPT1 ■	57.60	
Transformer type				
Black plastic bezel	6V fil bulb included	110-127V/6V	G1MP □ -KLTPT1 ■	73.10
		220-240V/6V	G1MP □ -KLTPT2 ■	73.10
		380-420V/6V	G1MP □ -KLTPT3 ■	73.10
		440/480V/6V	G1MP □ -KLTPT4 ■	73.10
		500-600V/6V	G1MP □ -KLTPT5 ■	73.10
	24V fil bulb included	110-127V/24V	G1MP □ -KLTPT6 ■	73.10
		220-240V/24V	G1MP □ -KLTPT7 ■	73.10
		380-420V/24V	G1MP □ -KLTPT8 ■	73.10
		440/480V/24V	G1MP □ -KLTPT9 ■	73.10
	24V AC/DC LED included	110-127V/24V	G1MP □ -KLTPTL1 ■	82.10
		220-240V/24V	G1MP □ -KLTPTL2 ■	82.10
		380-420V/24V	G1MP □ -KLTPTL3 ■	82.10
		440/480V/24V	G1MP □ -KLTPTL4 ■	82.10
Chrome bezel	6V fil bulb included	110-127V/6V	G2MP □ -MLTPT1 ■	73.10
		220-240V/6V	G2MP □ -MLTPT2 ■	73.10
		380-420V/6V	G2MP □ -MLTPT3 ■	73.10
		440/480V/6V	G2MP □ -MLTPT4 ■	73.10
		500-600V/6V	G2MP □ -MLTPT5 ■	73.10
	24V fil bulb included	110-127V/24V	G2MP □ -MLTPT6 ■	73.10
		220-240V/24V	G2MP □ -MLTPT7 ■	73.10
		380-420V/24V	G2MP □ -MLTPT8 ■	73.10
		440/480V/24V	G2MP □ -MLTPT9 ■	73.10
	24V AC/DC LED included	110-127V/24V	G2MP □ -MLTPTL1 ■	82.10
		220-240V/24V	G2MP □ -MLTPTL2 ■	82.10
		380-420V/24V	G2MP □ -MLTPTL3 ■	82.10
		440/480V/24V	G2MP □ -MLTPTL4 ■	82.10
Resistor type				
Black plastic bezel	120V fil bulb	G1MP □ -KLRPT1 ■	59.60	
	120V AC/DC LED	G1MP □ -KLRPTL1 ■	74.60	
	240V AC LED	G1MP □ -KLRPTL2 ■	74.60	
Chrome bezel	120V fil bulb	G2MP □ -MLRPT1 ■	61.60	
	120V AC/DC LED	G2MP □ -MLRPTL1 ■	76.60	
	240V AC LED	G2MP □ -MLRPTL2 ■	76.60	

Schematic

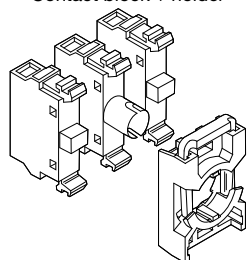


Press- to-test schematic

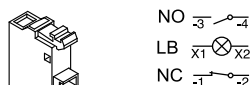
Accessories



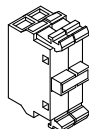
Contact block + holder



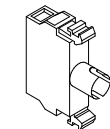
Contacts and
lamp block + holder



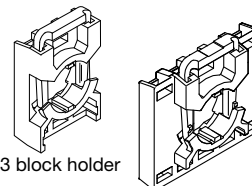
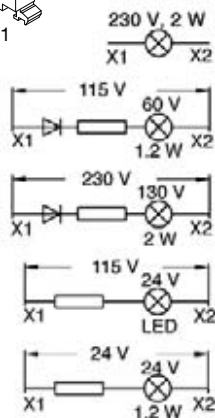
MCB-10



MCB-20



MLB-1



3 block holder

5 block holder

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	

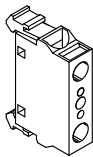
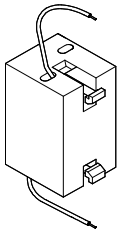
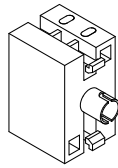
Single lamp blocks for front mounting, Ba 9s base

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 disturban- ces in the electronic circuit For 24 V filament bulb	MLB-5	1SFA 611 620 R1005	21.50

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

Accessories



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 No.	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	-	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.

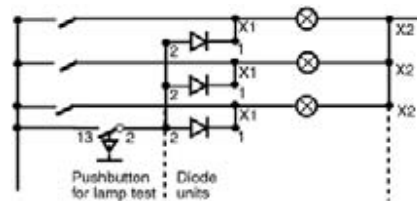
110 - 127V AC 6 V AC	-	T1	KTR1-2001	1SFA 616 950 R2001	35.00
220 - 250 V AC 6 V AC	-	T2	KTR1-2002	1SFA 616 950 R2002	
380 - 420 V AC 6 V AC	-	T3	KTR1-2003	1SFA 616 950 R2003	
440 - 480 V AC 6 V AC	-	T4	KTR1-2004	1SFA 616 950 R2004	
500 - 600 V AC 6 V AC	-	T5	KTR1-2005	1SFA 616 950 R2005	
110 - 127 V 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 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 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 with directly supplied lamp blocks only.

Accessories



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	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 (+).

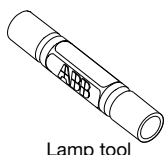
Description					Catalog number	Ref. code	List price
Color	Rated current mA	Wave-length nm	Luminance mcd				
Rated voltage 12 V, DC Service life >50 000 h							
Red	15	630	250		KA2-2011	1SFA 616 921 R2011	\$ 21.00
Green	15	525	1000		KA2-2012	1SFA 616 921 R2012	
Yellow	15	592	250		KA2-2013	1SFA 616 921 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 48 V, (AC)/DC Ⓢ Service life >50 000 h							
Red	12	630	200		KA2-2041	1SFA 616 921 R2041	21.00
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 by 30% and there is also a slight flickering.

Accessories



Flashing LED



Lamp tool



Mounting tool



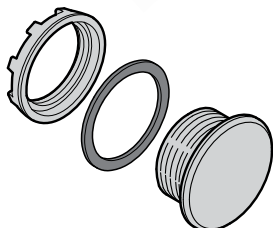
30mm adaptors



Flush mount adaptor



Extra key



Blanking plug



30mm gasket

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
Rated voltage 24 V, rated current 25 mA, DC					
	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

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	
Enclosures		
Plastic enclosures	IP 66	
Metallic enclosures	IP 67	



Material

No ozone depleting substances in the products.

All front parts are made of polycarbonate

Material		
PC	Polycarbonate	High impact strength, good outdoor resistance. Can withstand light acid solutions, aliphatic hydrocarbons, paraffin, alcohols, animal and vegetable greases.
PSU	Polysulphone	Can withstand high temperatures, acids, basic solutions, alkaline compounds, oils, alcohols.
PA	Polyamide	Can withstand high temperatures, aliphatic, aromatic and chlorinated hydrocarbons, esters, ketone-aldehydes, alcohols and basic solutions.
PBT		Can withstand 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
Exception: All pilot devices with 2 W continuously lit filament bulb	-25 to +40 °C
Storage temperature	-30 to +85 °C

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_o	
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_o	
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
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Lamp block

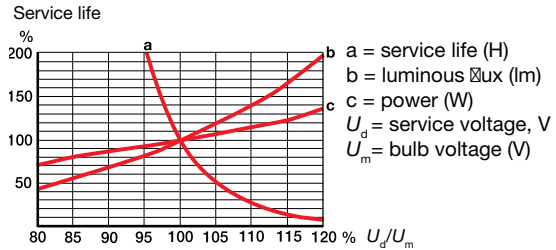
Ratings as per IEC 60 947-5-1

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	+				

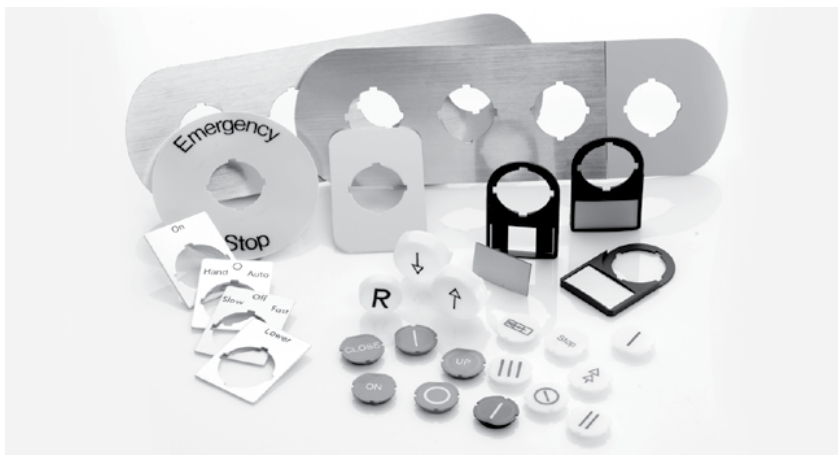
Transformer block

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

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.

30mm



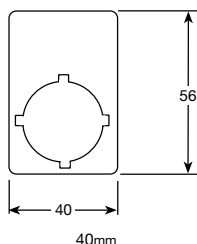
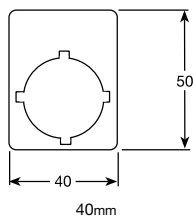
Custom legend plates

- 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

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

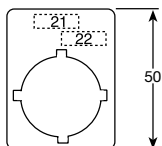
Of silvergrey aluminum, 50mm H

Text	Catalog Number	List Price
English		\$ 1.80
Close	SK 615 652-13	
Down	SK 615 652-14	
Emergency stop	SK 615 652-15	
Fast	SK 615 652-16	
Forward	SK 615 652-17	
In	SK 615 652-29	
Inching	SK 615 652-18	
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 two-position selector switches 30mm

Pilot Devices
Legend plates



Engraved fixed legend plates, with text ①

Of silvergrey aluminum, 50mm H

Symbol/Text

Pos 21 Pos. 22

English

Hand Auto
Jog Run
Off On
Stop Start

Catalog Number

List Price

SK 615 652-71

SK 615 652-52

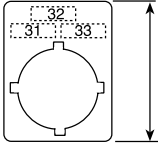
SK 615 652-53

SK 615 652-55

\$ 1.80

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

Legend plates for three-position selector switches 30mm



Engraved fixed legend plates, with text ①

Of silvergrey aluminum, 50mm H

Symbol/Text

Pos. 31 Pos. 32 Pos. 33

Catalog Number

List Price

English

Hand O Auto
Slow Off Fast

SK 615 652-80
SK 615 652-60

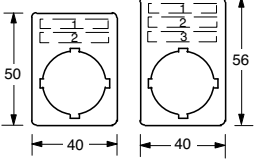
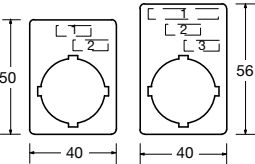
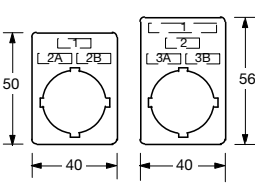
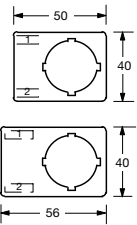
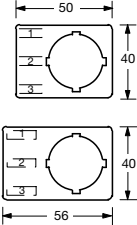
\$ 1.80

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

Custom engraved legend plates 30mm

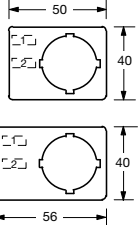
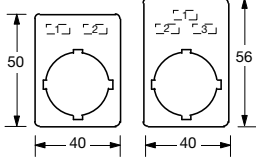
Pilot Devices
Legend plates

Fixed nameplates — aluminum

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



Fixed nameplates — aluminum

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

General specifications

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

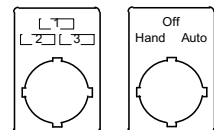
Ordering custom engraved nameplates

1. Select the desired legend plate.
2. Use pages 28 and 29 to order.
3. Indicate the catalog number.
4. Write the desired words to be engraved on each line.

EXAMPLE:

G1MP-NPE28P-03

- 1: OFF
2: HAND
3: AUTO



Engraved legend plate form

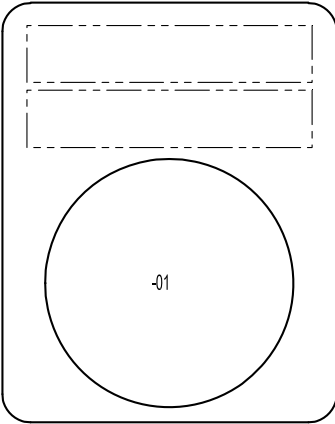
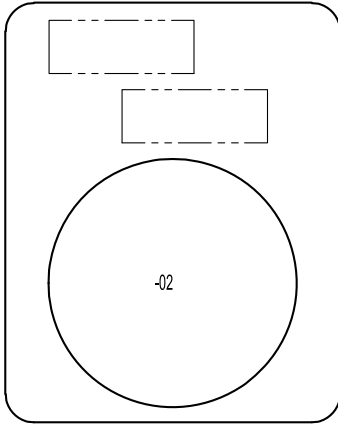
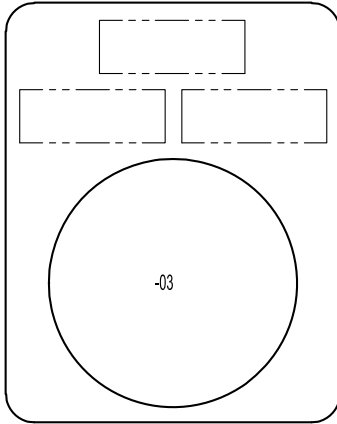
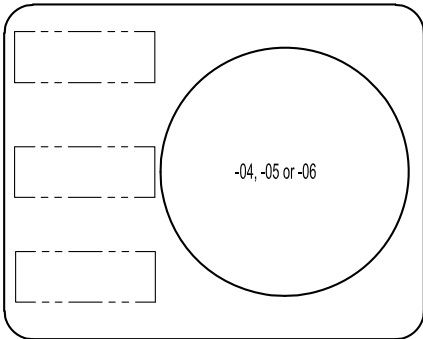
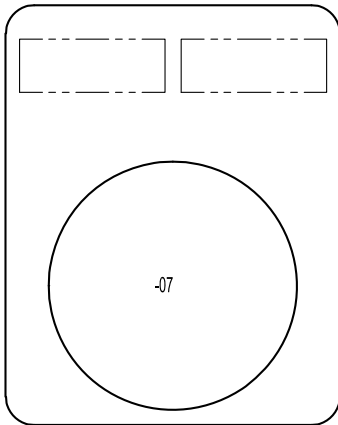
Custom engraved legend plates

30mm

ENGRAVED LEGEND PLATE FORM

G1 MP-NPE28-____ (BRUSHED ALUMINUM) PAGE:____ OF:____
 ORIG. DATE:____ ORDER NUMBER:____
 ISSUED BY:____ ORDER: QTY:____
 ALL CAPITALS? YES NO SHIPPING METHOD:____
 REMARKS:____ DUE DATE:____ - ____ - ____
 ENGRAVER:____
 Q.C. INSPECTION:____

PRINT INFORMATION TO BE ENGRAVED

 -01	 -02	 -03
 -04, -05 or -06	 -07	

G1 MP-NPE28
6/10/04

Engraved legend plate form
Custom engraved legend plates
30mm

Pilot Devices
Legend plates

ENGRAVED LEGEND PLATE FORM	
G1MP-NPE29-_____ G1MP-NPE29-_____ (BRUSHED ALUMINUM) ORIG. DATE: _____ ISSUED BY: _____ ALL CAPITALS? YES NO REMARKS: _____	PAGE: _____ OF: _____ ORDER NUMBER: _____ ORDER: QTY: _____ SHIPPING METHOD: _____ DUE DATE: ____ - ____ - ____ ENGRAVER: _____ Q.C. INSPECTION: _____
PRINT INFORMATION TO BE ENGRAVED	
-01 -02 -03 -04, -05 or -06 -07	

Text caps

Legend	Cap color ①	Suffix code ②	Flush button catalog number	Extended button catalog number	Pilot light catalog number	List price
	White	C82	1SFA616901R9036	—	—	\$.90
Start	White	C67	1SFA616901R2030	1SFA616902R2030	1SFA616903R2030	
START	Green	C5	1SFA616906R1042	—	—	
	Black	C81	1SFA616908R1042	—	—	
On	White	C68	1SFA616901R1020	1SFA616902R1020	1SFA616903R1020	
ON	White	C69	1SFA616901R1039	—	1SFA616903R1039	
	Green	C70	1SFA616906R1039	—	—	
	Black	C1	1SFA616908R1030	—	—	
Off	White	C71	1SFA616901R1019	1SFA616902R1019	1SFA616903R1019	
OFF	White	C72	—	1SFA616902R1040	—	
	Red	C73	—	1SFA616905R1040	—	
	Black	C2	1SFA616908R1040	1SFA616909R1040	—	
Stop	White	C74	1SFA616901R1031	1SFA616902R1031	1SFA616903R1031	
STOP	Red	C4	1SFA616904R1047	1SFA616905R1047	—	
Reset	White	C75	1SFA616901R1025	1SFA616902R1025	1SFA616903R1025	
Blank	White	C15	1SFA616901R9000	1SFA616902R9000	1SFA616903R9000	
	Green	CG	2949 1468-2	2949 1469-2	—	
UP	Green	C11	1SFA616906R1043	—	—	
DOWN	Green	C12	1SFA616906R1044	—	—	
OPEN	White	C16	1SFA616901R1045	—	—	
	Green	C19	1SFA616906R1045	—	—	
CLOSE	White	C17	1SFA616901R1046	—	—	
	Green	C20	1SFA616906R1046	—	—	
REV	Green	C6	1SFA616906R1048	—	—	
FWD	Green	C7	1SFA616906R1049	—	—	
SLOW	Green	C8	1SFA616906R1050	—	—	
FAST	Green	C9	1SFA616906R1051	—	—	
JOG	Green	C10	1SFA616906R1052	—	—	
RESET	Black	C3	1SFA616908R1041	—	—	
LATCH	White	C18	1SFA616901R1053	—	—	



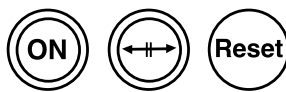
Flush
pushbutton



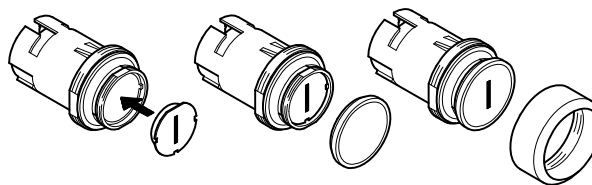
Extended
pushbutton



Pilot light



Examples of inserts



1

2

3

Insert assembly

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

Text caps

Flush button



Extended button



Can be turned 90° or 180°

Pilot light



Text caps for illuminated pushbuttons and pilot lights

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	\$.90
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.

Notes

Pilot Devices
Legend plates

Notes

Pilot Devices
Legend plates



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