
BROCHURE

Pilot devices

Assembled modular range
22 mm and 30 mm



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Pilot devices

Assembled modular range 22 mm and 30 mm



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, 40 mm and 60 mm 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

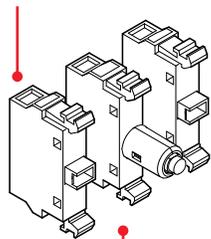
- LED bulbs for brighter, longer life
- Available in five colors and multiple voltage ratings

Pilot devices

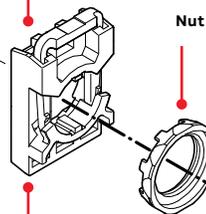
Assembled modular range 22 mm and 30 mm

Mounting

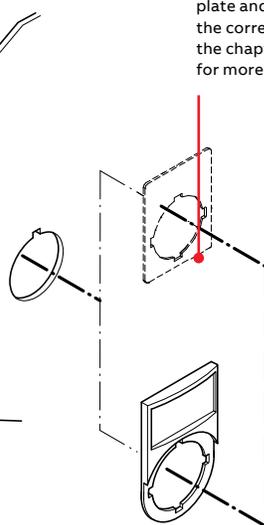
Contact block
Single pole with making or breaking contact



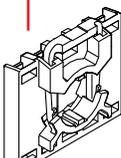
Holder
Available either for three or five blocks in one single row. Additional blocks can be stacked on holders for three blocks.



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.

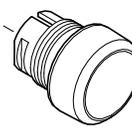


LED block
Illuminated pushbuttons, illuminated selector switches and pilot lights have a LED block in the center position of the holder.



Five block holder

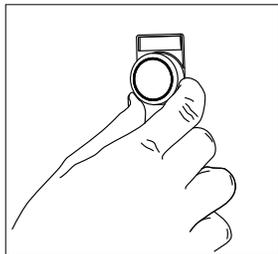
Operator
Buttons, lenses and handles in several colors. Illuminated or non-illuminated.



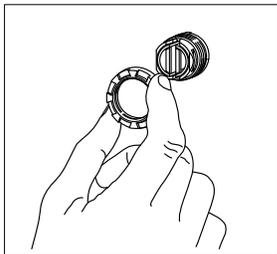
Bezels
Pushbuttons, selector switches and toggle switches with bezel in black plastic, chrome metal are available.

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

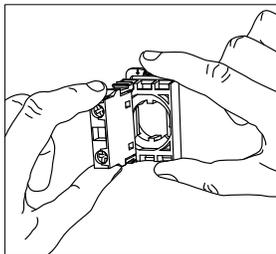
Easy to mount



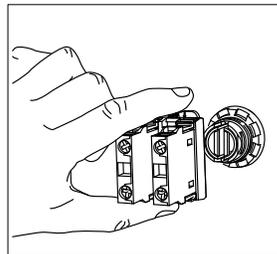
The operator is to be inserted from the front.....



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

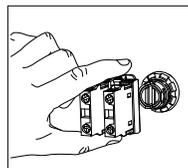
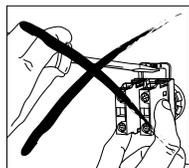


The contact blocks/lamp block are then snapped on to the holder...



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

... and easy to remove



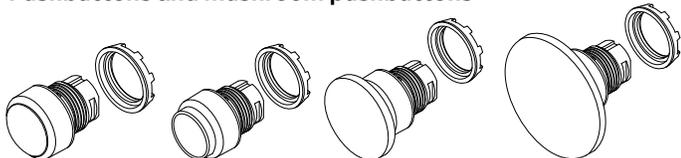
Press down the spring on the holder and pull the holder from the actuator.

Pilot devices

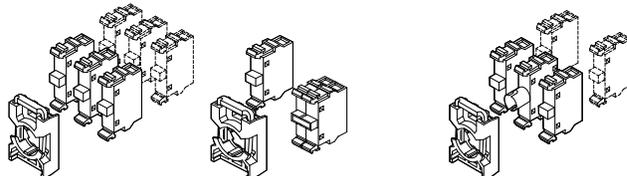
Assembled modular range 22 mm and 30 mm

Selection guide

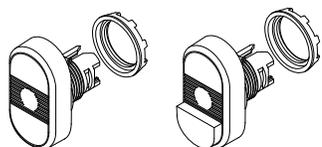
Pushbuttons and mushroom pushbuttons



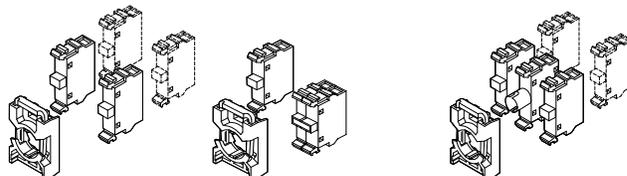
Contact block/lamp block combinations



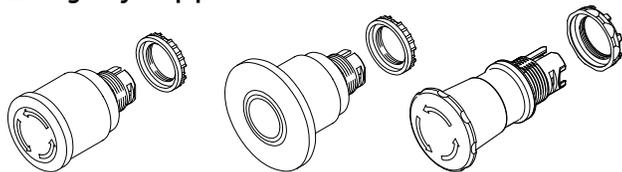
Double pushbuttons



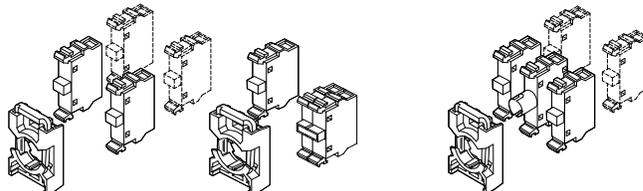
Contact block/lamp block combinations



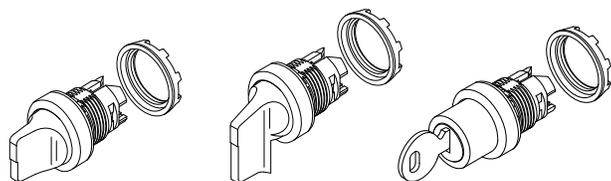
Emergency stop pushbuttons



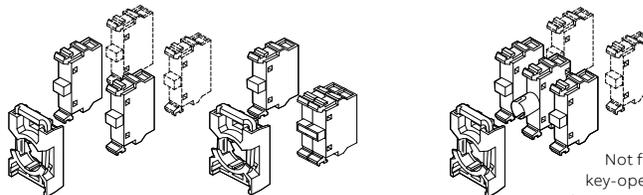
Contact block/lamp block combinations



Selector switches

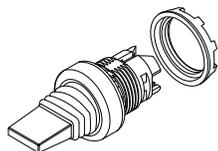


Contact block/lamp block combinations

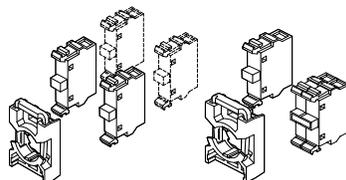


Not for the key-operated selector switches

Toggle switches



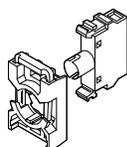
Contact block combinations



Pilot lights



LED block combination



Catalog number explanation

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

Pushbuttons, non-illuminated

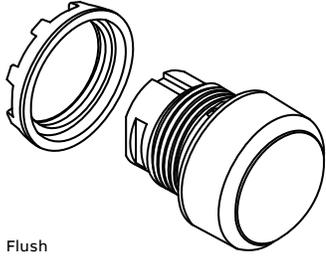
Options	Catalog number characters										
Momentary flush	M	P	1	-							
Maintained flush	M	P	2	-							
Momentary extended	M	P	3	-							
Maintained extended	M	P	4	-							
Bezel, black plastic, with holder				-	4	0					
Bezel, chrome metal, with holder				-	6	0					
Button color – red								R			
Button color – green								G			
Button color – yellow								Y			
Button color – blue								L			
Button color – white								W			
Button color – black								B			
Button color – clear								C			
Contact blocks, 1 NO									1	0	
Contact blocks, 2 NO									2	0	
Contact blocks, 3 NO									3	0	
Contact blocks, 1 NC									0	1	
Contact blocks, 2 NC									0	2	
Contact blocks, 3 NC									0	3	
Contact blocks, 1 NO + 1 NC									1	1	
Contact blocks, 2 NO + 1 NC									2	1	
Contact blocks, 1 NO + 2 NC									1	2	
Contact blocks, 1 NO, gold									1	0	G
Contact blocks, 2 NO, gold									2	0	G
Contact blocks, 3 NO, gold									3	0	G
Contact blocks, 1 NC, gold									0	1	G
Contact blocks, 2 NC, gold									0	2	G
Contact blocks, 3 NC, gold									0	3	G
Contact blocks, 1 NO + 1 NC, gold									1	1	G
Contact blocks, 2 NO + 1 NC, gold									2	1	G
Contact blocks, 1 NO + 2 NC, gold									1	2	G
5 block holder											5
30 mm black plastic adapter ring	G	1									
30 mm chrome metal adapter ring	G	2									
	G	1	M	P	1	-	4	0	R	1	0

Example:

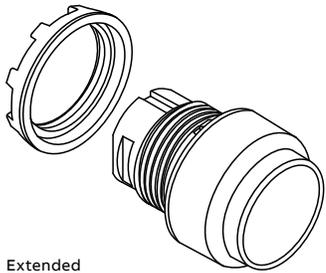
What is the catalog number for a 22 mm momentary flush pushbutton with a black bezel, red button, 1 NO contact block and a black plastic adapter ring? Follow the arrows to see how the catalog number is determined, G1MP1-40R10.

Pushbuttons

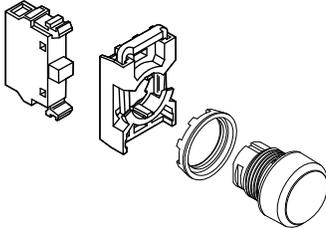
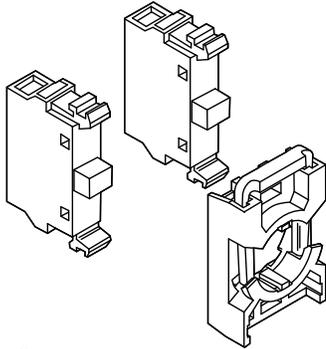
Non-illuminated



Flush



Extended



Pushbuttons, non-illuminated

Options

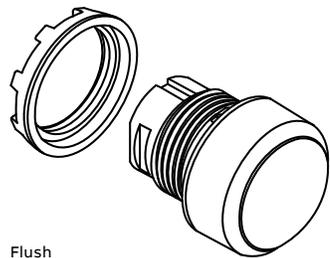
					Catalog number characters		
Momentary flush	M	P	1	-			
Maintained flush ¹	M	P	2	-			
Momentary extended	M	P	3	-			
Maintained extended ¹	M	P	4	-			
Bezel, black plastic, with holder					-	4	0
Bezel, chrome metal, with holder					-	6	0
Button color – red							R
Button color – green							G
Button color – yellow							Y
Button color – blue							L
Button color – white							W
Button color – black							B
Button color – clear							C
Contact blocks, 1NO							1 0
Contact blocks, 2NO							2 0
Contact blocks, 3NO							3 0
Contact blocks, 1NC							0 1
Contact blocks, 2NC							0 2
Contact blocks, 3NC							0 3
Contact blocks, 1NO+1NC							1 1
Contact blocks, 2NO+1NC							2 1
Contact blocks, 1NO+2NC							1 2
Contact blocks, 1NO, gold							1 0 G
Contact blocks, 2NO, gold							2 0 G
Contact blocks, 3NO, gold							3 0 G
Contact blocks, 1NC, gold							0 1 G
Contact blocks, 2NC, gold							0 2 G
Contact blocks, 3NC, gold							0 3 G
Contact blocks, 1NO+1NC, gold							1 1 G
Contact blocks, 2NO+1NC, gold							2 1 G
Contact blocks, 1NO+2NC, gold							1 2 G
5 block holder							
30 mm black plastic adaptor ring	G	1					
30 mm chrome metal adaptor ring	G	2					

See catalog number explanation on page 7.

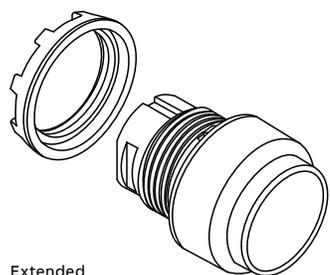
¹ No contact block in center position.

Pushbuttons

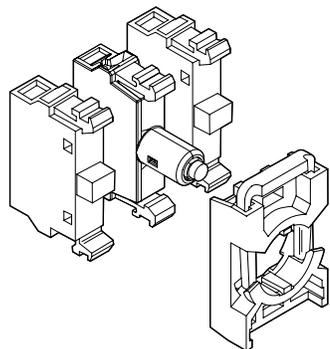
Illuminated¹



Flush



Extended



Pushbuttons, illuminated¹

Options	Catalog number characters			
Momentary flush	M	P	1	-
Maintained flush	M	P	2	-
Momentary extended	M	P	3	-
Maintained extended	M	P	4	-
Bezel, black plastic, with holder	-	-	4	
Bezel, chrome metal, with holder	-	-	6	
Lamp block with integrated LED ²			7	
Button color – red	-			R
Button color – green	-			G
Button color – yellow	-			Y
Button color – blue	-			L
Button color – white	-			W
Button color – clear	-			C
Contact blocks, 1NO	-		1	0
Contact blocks, 2NO	-		2	0
Contact blocks, 3NO	-		3	0
Contact blocks, 1NC	-		0	1
Contact blocks, 2NC	-		0	2
Contact blocks, 3NC	-		0	3
Contact blocks, 1NO+1NC	-		1	1
Contact blocks, 2NO+1NC	-		2	1
Contact blocks, 1NO+2NC	-		1	2
Contact blocks, 1NO, gold	-		1	0 G
Contact blocks, 2NO, gold	-		2	0 G
Contact blocks, 3NO, gold	-		3	0 G
Contact blocks, 1NC, gold	-		0	1 G
Contact blocks, 2NC, gold	-		0	2 G
Contact blocks, 3NC, gold	-		0	3 G
Contact blocks, 1NO+1NC, gold	-		1	1 G
Contact blocks, 2NO+1NC, gold	-		2	1 G
Contact blocks, 1NO+2NC, gold	-		1	2 G
LED 12 V DC	-			L 7
LED 24 V AC/DC	-			L 8
LED 48 V AC/DC	-			L 9
LED 60 V AC/DC	-			L 6 0
LED 110-130 V AC	-			L 1
LED 110-130 V DC	-			L 1 3
LED 220 V DC	-			L 2
LED 230 V AC	-			L 2 3
LED 380 V AC	-			L 3 8
LED 415 V AC	-			L 4 1
5 block holder	-			5
30 mm black plastic adaptor ring	G	1	-	
30 mm chrome metal adaptor ring	G	2	-	

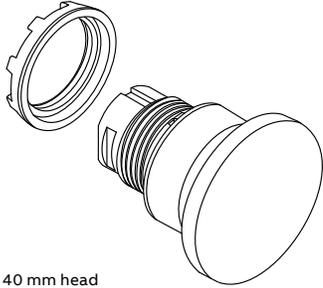
See catalog number explanation on page 7.

¹ No contact block in center position.

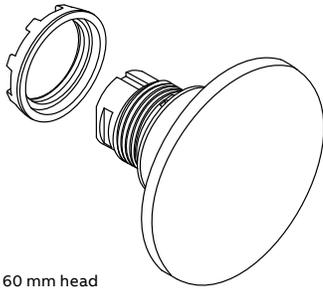
² Includes one diode chip integrated into lamp block.

Mushroom pushbuttons

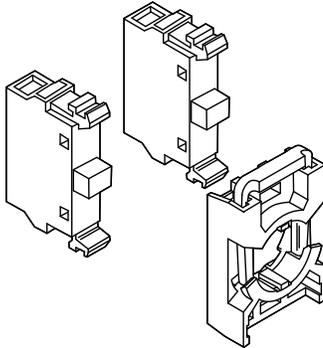
Non-illuminated, momentary



40 mm head



60 mm head



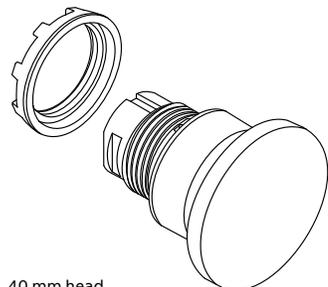
Mushroom pushbuttons, non-illuminated

Options	Catalog number characters				
Momentary, 40 mm	M	P	M	1	-
Momentary, 60 mm	M	P	M	2	-
Bezel, black plastic, with holder				4	0
Bezel, chrome metal, with holder				6	0
Button color – red					R
Button color – yellow					Y
Button color – black					B
Contact blocks, 1NO				1	0
Contact blocks, 2NO				2	0
Contact blocks, 3NO				3	0
Contact blocks, 1NC				0	1
Contact blocks, 2NC				0	2
Contact blocks, 3NC				0	3
Contact blocks, 1NO+1NC				1	1
Contact blocks, 2NO+1NC				2	1
Contact blocks, 1NO+2NC				1	2
Contact blocks, 1NO, gold				1	0 G
Contact blocks, 2NO, gold				2	0 G
Contact blocks, 3NO, gold				3	0 G
Contact blocks, 1NC, gold				0	1 G
Contact blocks, 2NC, gold				0	2 G
Contact blocks, 3NC, gold				0	3 G
Contact blocks, 1NO+1NC, gold				1	1 G
Contact blocks, 2NO+1NC, gold				2	1 G
Contact blocks, 1NO+2NC, gold				1	2 G
5 block holder					5
30 mm black plastic adaptor ring	G	1			
30 mm chrome metal adaptor ring	G	2			

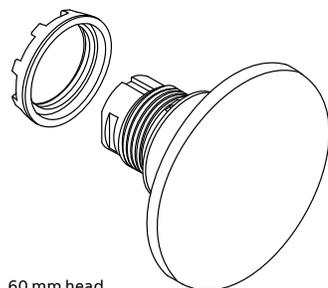
See catalog number explanation on page 7.

Mushroom pushbuttons

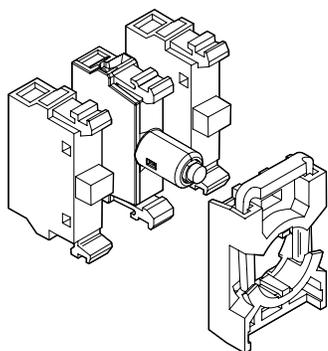
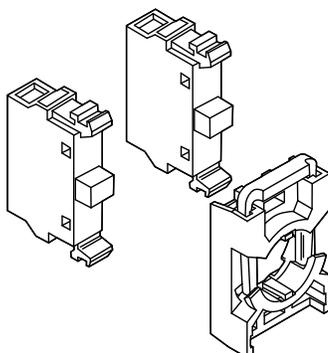
Illuminated, momentary¹



40 mm head



60 mm head



Mushroom pushbuttons, illuminated, momentary¹

Options	Catalog number characters				
Momentary, 40 mm	M	P	M	1	-
Momentary, 60 mm	M	P	M	2	-
Bezel, black plastic, with holder				-	4
Bezel, chrome metal, with holder				-	6
Lamp block with integrated LED ²				-	7
Button color – red				-	R
Button color – yellow				-	Y
Button color – green (40 mm only)				-	G
Contact blocks, 1NO				-	1 0
Contact blocks, 2NO				-	2 0
Contact blocks, 3NO				-	3 0
Contact blocks, 1NC				-	0 1
Contact blocks, 2NC				-	0 2
Contact blocks, 3NC				-	0 3
Contact blocks, 1NO+1NC				-	1 1
Contact blocks, 2NO+1NC				-	2 1
Contact blocks, 1NO+2NC				-	1 2
Contact blocks, 1NO, gold				-	1 0 G
Contact blocks, 2NO, gold				-	2 0 G
Contact blocks, 3NO, gold				-	3 0 G
Contact blocks, 1NC, gold				-	0 1 G
Contact blocks, 2NC, gold				-	0 2 G
Contact blocks, 3NC, gold				-	0 3 G
Contact blocks, 1NO+1NC, gold				-	1 1 G
Contact blocks, 2NO+1NC, gold				-	2 1 G
Contact blocks, 1NO+2NC, gold				-	1 2 G
LED 12 V DC				-	L 7
LED 24 V AC/DC				-	L 8
LED 48 V AC/DC				-	L 9
LED 60 V AC/DC				-	L 6 0
LED 110-130 V AC				-	L 1
LED 110-130 V DC				-	L 1 3
LED 220 V DC				-	L 2
LED 230 V AC				-	L 2 3
LED 380 V AC				-	L 3 8
LED 415 V AC				-	L 4 1
5 block holder				-	5
30 mm black plastic adaptor ring	G	1		-	
30 mm chrome petal adaptor ring	G	2		-	

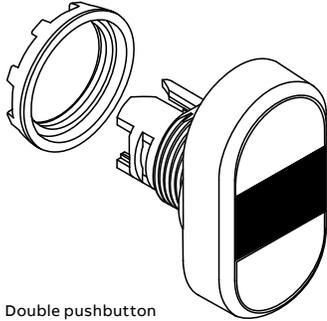
See catalog number explanation on page 7.

¹ No contact block in center position.

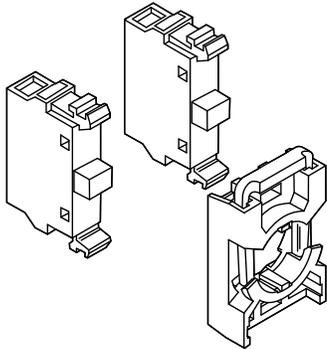
² Includes one diode chip integrated into lamp block.

Double pushbuttons

Flush/flush, non-illuminated¹



Double pushbutton



Double pushbuttons, flush/flush, non-illuminated¹

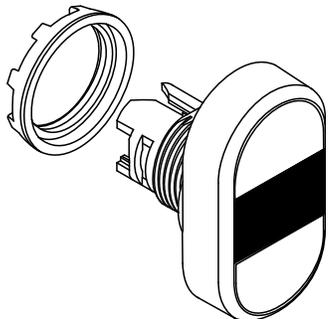
Options	Catalog number characters				
Flush/flush, green/red	M	P	D	1	-
Flush/flush, green/red, I/O	M	P	D	2	-
Flush/flush, green/red, ON/OFF	M	P	D	3	-
Flush/flush, green/red, START/STOP	M	P	D	4	-
Flush/flush, white/black	M	P	D	5	-
Flush/flush, white/black, I/O	M	P	D	6	-
Flush/flush, white/black, ON/OFF	M	P	D	7	-
Flush/flush, white/black, START/STOP	M	P	D	8	-
With holder				2	0
Center lens color – black					B
Contact blocks, 1NO				1	0
Contact blocks, 2NO				2	0
Contact blocks, 3NO				3	0
Contact blocks, 1NC				0	1
Contact blocks, 2NC				0	2
Contact blocks, 3NC				0	3
Contact blocks, 1NO+1NC				1	1
Contact blocks, 2NO+1NC				2	1
Contact blocks, 1NO+2NC				1	2
Contact blocks, 1NO, gold				1	0 G
Contact blocks, 2NO, gold				2	0 G
Contact blocks, 3NO, gold				3	0 G
Contact blocks, 1NC, gold				0	1 G
Contact blocks, 2NC, gold				0	2 G
Contact blocks, 3NC, gold				0	3 G
Contact blocks, 1NO+1NC, gold				1	1 G
Contact blocks, 2NO+1NC, gold				2	1 G
Contact blocks, 1NO+2NC, gold				1	2 G
5 block holder					5

See catalog number explanation on page 7.

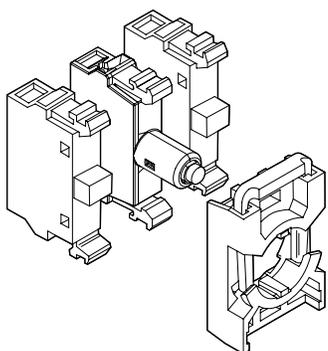
¹ No contact block in center position.

Double pushbuttons

Flush/flush, illuminated center¹



Double pushbutton, flush/flush



Double pushbuttons, flush/flush, illuminated center¹

Options	Catalog number characters			
Flush/flush, green/red	M	P	D	1 -
Flush/flush, green/red, I/O	M	P	D	2 -
Flush/flush, green/red, ON/OFF	M	P	D	3 -
Flush/flush, green/red, START/STOP	M	P	D	4 -
Flush/flush, white/black	M	P	D	5 -
Flush/flush, white/black, I/O	M	P	D	6 -
Flush/flush, white/black, ON/OFF	M	P	D	7 -
Flush/flush, white/black, START/STOP	M	P	D	8 -
With holder				- 2
Lamp block with integrated LED ²				7
Center lens color – red				- R
Center lens color – yellow				- Y
Center lens color – green				- G
Center lens color – clear				- C
Contact blocks, 1NO				- 1 0
Contact blocks, 2NO				- 2 0
Contact blocks, 3NO				- 3 0
Contact blocks, 1NC				- 0 1
Contact blocks, 2NC				- 0 2
Contact blocks, 3NC				- 0 3
Contact blocks, 1NO+1NC				- 1 1
Contact blocks, 2NO+1NC				- 2 1
Contact blocks, 1NO+2NC				- 1 2
Contact blocks, 1NO, gold				- 1 0 G
Contact blocks, 2NO, gold				- 2 0 G
Contact blocks, 3NO, gold				- 3 0 G
Contact blocks, 1NC, gold				- 0 1 G
Contact blocks, 2NC, gold				- 0 2 G
Contact blocks, 3NC, gold				- 0 3 G
Contact blocks, 1NO+1NC, gold				- 1 1 G
Contact blocks, 2NO+1NC, gold				- 2 1 G
Contact blocks, 1NO+2NC, gold				- 1 2 G
LED 12 V DC				- L 7
LED 24 V AC/DC				- L 8
LED 48 V AC/DC				- L 9
LED 60 V AC/DC				- L 6 0
LED 110-130 V AC				- L 1
LED 110-130 V DC				- L 1 3
LED 220 V DC				- L 2
LED 230 V AC				- L 2 3
LED 380 V AC				- L 3 8
LED 415 V AC				- L 4 1
5 block holder				- 5

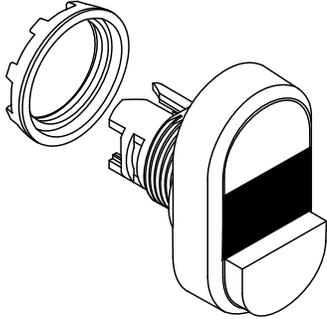
See catalog number explanation on page 7.

¹ No contact block in center position.

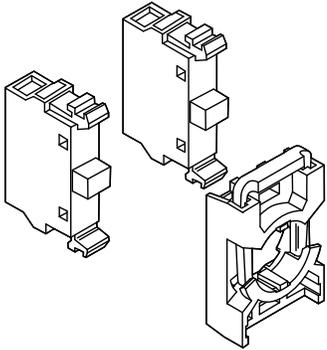
² Includes one diode chip integrated into lamp block.

Double pushbuttons

Flush/extended, non-illuminated¹



Double pushbutton, flush/extended



Double pushbuttons, flush/extended, non-illuminated¹

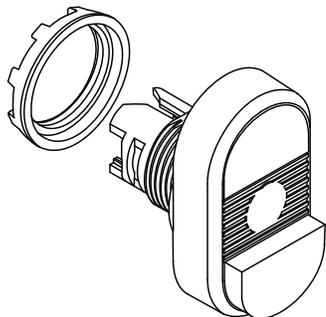
Options	Catalog number characters					
Flush/extended, green/red	M	P	D	1	2	-
Flush/extended, green/red, I/O	M	P	D	1	3	-
Flush/extended, green/red, ON/OFF	M	P	D	1	4	-
Flush/extended, green/red, START/STOP	M	P	D	1	5	-
Flush/extended, white/black	M	P	D	1	6	-
Flush/extended, white/black, I/O	M	P	D	1	7	-
Flush/extended, white/black, ON/OFF	M	P	D	1	8	-
Flush/extended, white/black, START/STOP	M	P	D	1	9	-
With holder					2	0
Center lens color – black						B
Contact blocks, 1NO					1	0
Contact blocks, 2NO					2	0
Contact blocks, 3NO					3	0
Contact blocks, 1NC					0	1
Contact blocks, 2NC					0	2
Contact blocks, 3NC					0	3
Contact blocks, 1NO+1NC					1	1
Contact blocks, 2NO+1NC					2	1
Contact blocks, 1NO+2NC					1	2
Contact blocks, 1NO, gold					1	0 G
Contact blocks, 2NO, gold					2	0 G
Contact blocks, 3NO, gold					3	0 G
Contact blocks, 1NC, gold					0	1 G
Contact blocks, 2NC, gold					0	2 G
Contact blocks, 3NC, gold					0	3 G
Contact blocks, 1NO+1NC, gold					1	1 G
Contact blocks, 2NO+1NC, gold					2	1 G
Contact blocks, 1NO+2NC, gold					1	2 G
5 block holder						5

See catalog number explanation on page 7.

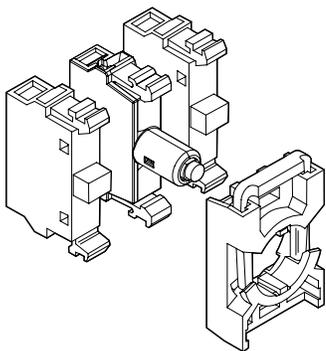
¹ No contact block in center position.

Double pushbuttons

Flush/extended, illuminated¹



Double pushbutton, flush/extended, illuminated



Double pushbuttons, flush/extended, illuminated¹

Options	Catalog number characters				
Flush/extended, green/red	M	P	D	1 2	-
Flush/extended, green/red, I/O	M	P	D	1 3	-
Flush/extended, green/red, ON/OFF	M	P	D	1 4	-
Flush/extended, green/red, START/STOP	M	P	D	1 5	-
Flush/extended, white/black	M	P	D	1 6	-
Flush/extended, white/black, I/O	M	P	D	1 7	-
Flush/extended, white/black, ON/OFF	M	P	D	1 8	-
Flush/extended, white/black, START/STOP	M	P	D	1 9	-
With holder					- 2
Lamp block with integrated LED ²					7
Center lens color – red					- R
Center lens color – yellow					- Y
Center lens color – green					- G
Center lens color – clear					- C
Contact blocks, 1NO					- 1 0
Contact blocks, 2NO					- 2 0
Contact blocks, 3NO					- 3 0
Contact blocks, 1NC					- 0 1
Contact blocks, 2NC					- 0 2
Contact blocks, 3NC					- 0 3
Contact blocks, 1NO+1NC					- 1 1
Contact blocks, 2NO+1NC					- 2 1
Contact blocks, 1NO+2NC					- 1 2
Contact blocks, 1NO, gold					- 1 0 G
Contact blocks, 2NO, gold					- 2 0 G
Contact blocks, 3NO, gold					- 3 0 G
Contact blocks, 1NC, gold					- 0 1 G
Contact blocks, 2NC, gold					- 0 2 G
Contact blocks, 3NC, gold					- 0 3 G
Contact blocks, 1NO+1NC, gold					- 1 1 G
Contact blocks, 2NO+1NC, gold					- 2 1 G
Contact blocks, 1NO+2NC, gold					- 1 2 G
LED 12 V DC					- L 7
LED 24 V AC/DC					- L 8
LED 48 V AC/DC					- L 9
LED 60 V AC/DC					- L 6 0
LED 110-130 V AC					- L 1
LED 110-130 V DC					- L 1 3
LED 220 V DC					- L 2
LED 230 V AC					- L 2 3
LED 380 V AC					- L 3 8
LED 415 V AC					- L 4 1
5 block holder					- 5

See catalog number explanation on page 7.

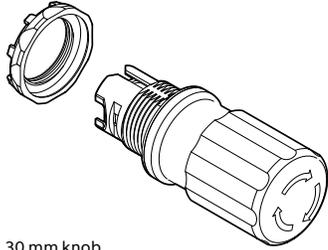
¹ No contact block in center position.

² Includes one diode chip integrated into lamp block.

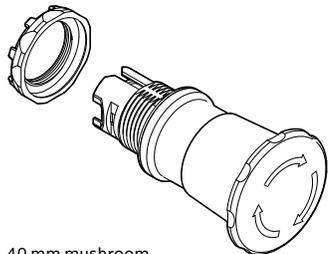
Emergency stops & twist, pull release operators

Non-illuminated, maintained

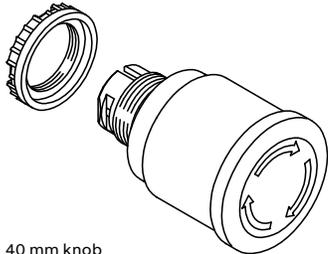
Fulfills IEC 60947-5-5



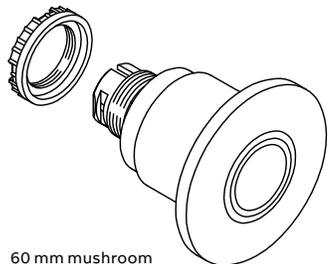
30 mm knob



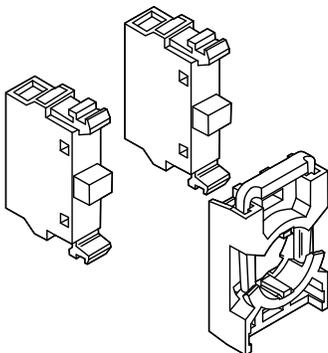
40 mm mushroom



40 mm knob



60 mm mushroom



Emergency stops and machine stops, non-illuminated, maintained

Options	Catalog number characters				
30 mm knob, twist release	M	P	E	T	3 -
30 mm knob, pull release	M	P	E	P	3 -
30 mm knob, key release (key code 71)	M	P	E	K	3 -
40 mm mushroom, twist release	M	P	E	T	4 -
40 mm mushroom, pull release	M	P	E	P	4 -
40 mm mushroom, key release (key code 71)	M	P	E	K	4 -
60 mm mushroom twist release	M	P	M	T	4 -
60 mm mushroom pull release	M	P	M	P	4 -
With holder, 3 block					- 2 0
Red					- R
Contact blocks, 1NO					- 1 0
Contact blocks, 2NO					- 2 0
Contact blocks, 3NO					- 3 0
Contact blocks, 1NC					- 0 1
Contact blocks, 2NC					- 0 2
Contact blocks, 3NC					- 0 3
Contact blocks, 1NO+1NC					- 1 1
Contact blocks, 2NO+1NC					- 2 1
Contact blocks, 1NO+2NC					- 1 2
Contact blocks, 1NO, gold					- 1 0 G
Contact blocks, 2NO, gold					- 2 0 G
Contact blocks, 3NO, gold					- 3 0 G
Contact blocks, 1NC, gold					- 0 1 G
Contact blocks, 2NC, gold					- 0 2 G
Contact blocks, 3NC, gold					- 0 3 G
Contact blocks, 1NO+1NC, gold					- 1 1 G
Contact blocks, 2NO+1NC, gold					- 2 1 G
Contact blocks, 1NO+2NC, gold					- 1 2 G
5 block holder					- 5
30 mm black plastic adaptor ring	G				1
30 mm chrome metal adaptor ring	G				2

See catalog number explanation on page 7.

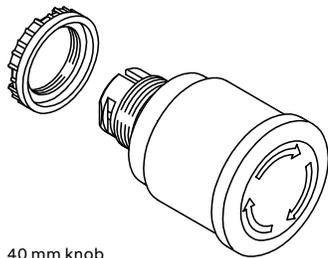
NOTE:

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

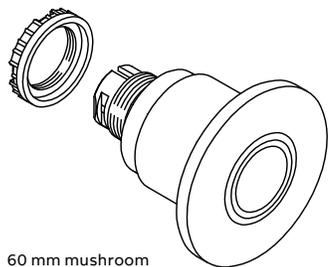
Emergency stops and twist, pull release operators

Illuminated, maintained¹

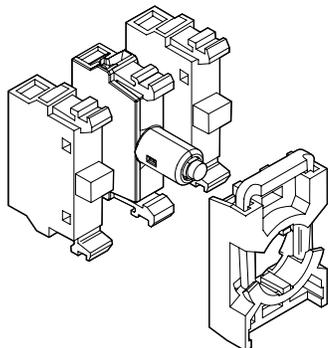
Fulfills IEC 60947-5-5



40 mm knob



60 mm mushroom



Emergency stops and machine stops, illuminated¹

Options	Catalog number characters	
40 mm knob twist release	M P M T 3	-
60 mm mushroom twist release	M P M T 4	-
60 mm mushroom pull release	M P M P 4	-
With holder		- 2
Lamp block with integrated LED ²		7
Button color – red		R
Contact blocks, 1NO		1 0
Contact blocks, 2NO		2 0
Contact blocks, 3NO		3 0
Contact blocks, 1NC		0 1
Contact blocks, 2NC		0 2
Contact blocks, 3NC		0 3
Contact blocks, 1NO+1NC		1 1
Contact blocks, 2NO+1NC		2 1
Contact blocks, 1NO+2NC		1 2
Contact blocks, 1NO, gold		1 0 G
Contact blocks, 2NO, gold		2 0 G
Contact blocks, 3NO, gold		3 0 G
Contact blocks, 1NC, gold		0 1 G
Contact blocks, 2NC, gold		0 2 G
Contact blocks, 3NC, gold		0 3 G
Contact blocks, 1NO+1NC, gold		1 1 G
Contact blocks, 2NO+1NC, gold		2 1 G
Contact blocks, 1NO+2NC, gold		1 2 G
LED 12 V DC		L 7
LED 24 V AC/DC		L 8
LED 48 V AC/DC		L 9
LED 60 V AC/DC		L 6 0
LED 110-130 V AC		L 1
LED 110-130 V DC		L 1 3
LED 220 V DC		L 2
LED 230 V AC		L 2 3
LED 380 V AC		L 3 8
LED 415 V AC		L 4 1
5 block holder		5
30 mm black plastic adaptor ring	G 1	
30 mm chrome metal adaptor ring	G 2	

See catalog number explanation on page 7.

¹ No contact block in center position.

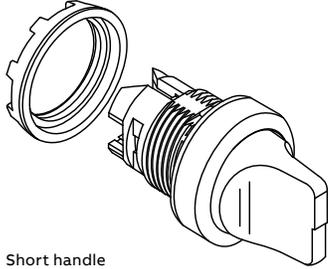
² Includes one diode chip integrated into lamp block.

NOTE:

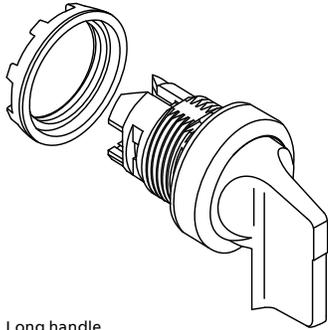
1. If used as an emergency stop, the device must have a yellow background.
2. E-stop requires twist to release only.

Selector switches, two position

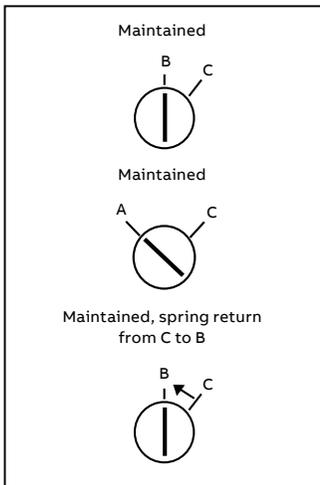
Non-illuminated¹



Short handle



Long handle



Selector switches, 2 position, non-illuminated¹

Options	Catalog number characters				
Short/main B&C	M	2	S	S	1 -
Short/main A&C	M	2	S	S	2 -
Short/spring return C to B	M	2	S	S	3 -
Long/main B&C	M	2	S	S	4 -
Long/main A&C	M	2	S	S	5 -
Long/spring return C to B	M	2	S	S	6 -
Bezel, black plastic, with holder					- 4 0
Bezel, chrome metal, with holder					- 6 0
Switch color – red					- R
Switch color – black					- B
Switch color – grey					- U
Contact blocks, 1NO					- 1 0
Contact blocks, 2NO					- 2 0
Contact blocks, 3NO					- 3 0
Contact blocks, 1NC					- 0 1
Contact blocks, 2NC					- 0 2
Contact blocks, 3NC					- 0 3
Contact blocks, 1NO+1NC					- 1 1
Contact blocks, 2NO+1NC					- 2 1
Contact blocks, 1NO+2NC					- 1 2
Contact blocks, 1NO, gold					- 1 0 G
Contact blocks, 2NO, gold					- 2 0 G
Contact blocks, 3NO, gold					- 3 0 G
Contact blocks, 1NC, gold					- 0 1 G
Contact blocks, 2NC, gold					- 0 2 G
Contact blocks, 3NC, gold					- 0 3 G
Contact blocks, 1NO+1NC, gold					- 1 1 G
Contact blocks, 2NO+1NC, gold					- 2 1 G
Contact blocks, 1NO+2NC, gold					- 1 2 G
5 Block holder					- 5
30 mm black plastic adaptor ring	G	1			
30 mm chrome metal adaptor ring	G	2			

See catalog number explanation on page 7.

¹ No contact block in center position.

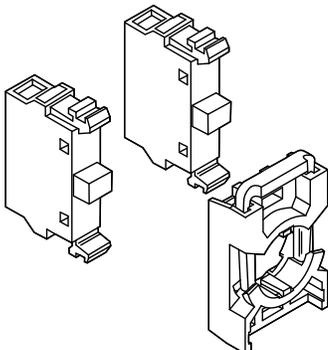
Contact functions

Block positions as seen from operator front.

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

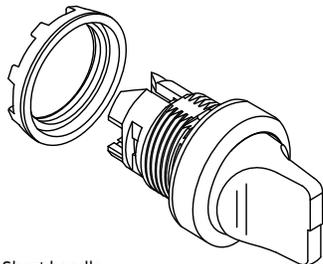
O = not actuated (normal state)

X = actuated (changed state)

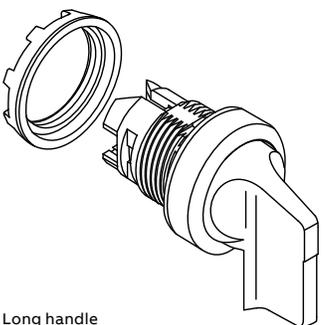


Selector switches, two position

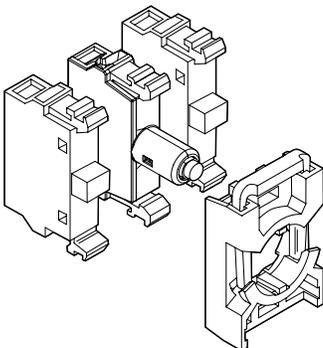
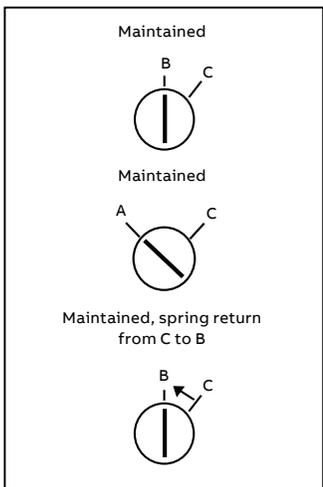
Illuminated¹



Short handle



Long handle



Selector switches, 2 position, illuminated¹

Options	Catalog number characters				
Short/main B&C	M	2	S	S	1 -
Short/main A&C	M	2	S	S	2 -
Short/spring return C to B	M	2	S	S	3 -
Long/main B&C	M	2	S	S	4 -
Long/main A&C	M	2	S	S	5 -
Long/spring return C to B	M	2	S	S	6 -
Bezel, black plastic, with holder					- 4
Bezel, chrome metal, with holder					- 6
Lamp block with integrated LED ²					7
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
Contact blocks, 2NO					- 2 0
Contact blocks, 3NO					- 3 0
Contact blocks, 1NC					- 0 1
Contact blocks, 2NC					- 0 2
Contact blocks, 3NC					- 0 3
Contact blocks, 1NO+1NC					- 1 1
Contact blocks, 2NO+1NC					- 2 1
Contact blocks, 1NO+2NC					- 1 2
Contact blocks, 1NO, gold					- 1 0 G
Contact blocks, 2NO, gold					- 2 0 G
Contact blocks, 3NO, gold					- 3 0 G
Contact blocks, 1NC, gold					- 0 1 G
Contact blocks, 2NC, gold					- 0 2 G
Contact blocks, 3NC, gold					- 0 3 G
Contact blocks, 1NO+1NC, gold					- 1 1 G
Contact blocks, 2NO+1NC, gold					- 2 1 G
Contact blocks, 1NO+2NC, gold					- 1 2 G
LED 12 V DC					- L 7
LED 24 V AC/DC					- L 8
LED 48 V AC/DC					- L 9
LED 60 V AC/DC					- L 6 0
LED 110-130 V AC					- L 1
LED 110-130 V DC					- L 1 3
LED 220 V DC					- L 2
LED 230 V AC					- L 2 3
LED 380 V AC					- L 3 8
LED 415 V AC					- L 4 1
5 block holder					- 5
30 mm black plastic adaptor ring ²	G				1
30 mm chrome metal adaptor ring ²	G				2

See catalog number explanation on page 7.

¹ No contact block in center position.

² Includes one diode chip integrated into lamp block.

Contact functions

Block positions as seen from operator front.

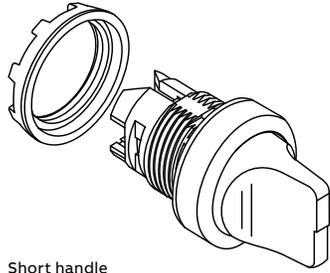
Handle position	Left block	Right block
A or (B)	O	O
C	X	X

O = not actuated (normal state)

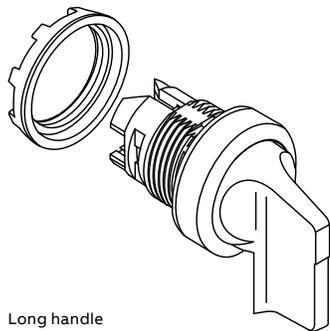
X = actuated (changed state)

Selector switches, two position

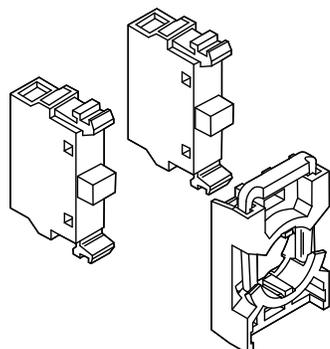
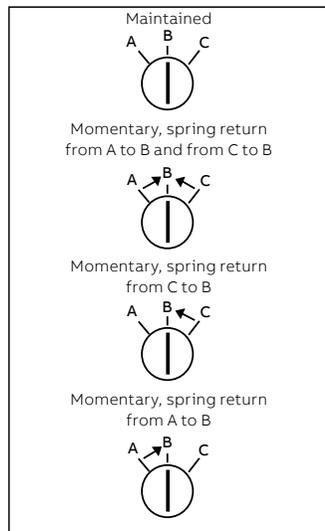
Non-Illuminated¹



Short handle



Long handle



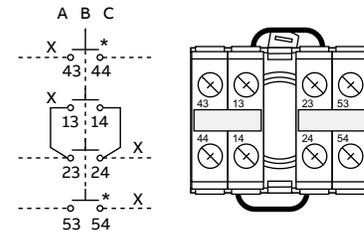
Selector switches, 2 position, non-illuminated¹

Options	Catalog number characters				
Short/3-main	M	3	S	S	1 -
Short/spring return to B	M	3	S	S	2 -
Short/main A&B/spring return C to B	M	3	S	S	3 -
Long/3-main	M	3	S	S	4 -
Long/spring return to B	M	3	S	S	5 -
Long/main A&B/spring return C to B	M	3	S	S	6 -
Short/main B&C/spring return A to B	M	3	S	S	7 -
Long/main B&C/spring return A to B	M	3	S	S	8 -
Bezel, black plastic, with holder					- 4 0
Bezel, chrome metal, with holder					- 6 0
Switch color - red					- R
Switch color - black					- B
Switch color - grey					- U
Contact blocks, 1NO					- 1 0
Contact blocks, 2NO					- 2 0
Contact blocks, 3NO					- 3 0
Contact blocks, 1NC					- 0 1
Contact blocks, 2NC					- 0 2
Contact blocks, 3NC					- 0 3
Contact blocks, 1NO+1NC					- 1 1
Contact blocks, 2NO+1NC					- 2 1
Contact blocks, 1NO+2NC					- 1 2
Contact blocks, 1NO, gold					- 1 0 G
Contact blocks, 2NO, gold					- 2 0 G
Contact blocks, 3NO, gold					- 3 0 G
Contact blocks, 1NC, gold					- 0 1 G
Contact blocks, 2NC, gold					- 0 2 G
Contact blocks, 3NC, gold					- 0 3 G
Contact blocks, 1NO+1NC, gold					- 1 1 G
Contact blocks, 2NO+1NC, gold					- 2 1 G
Contact blocks, 1NO+2NC, gold					- 1 2 G
5 block holder					- 5
30 mm black plastic adaptor ring	G	1			
30 mm chrome metal adaptor ring	G	2			

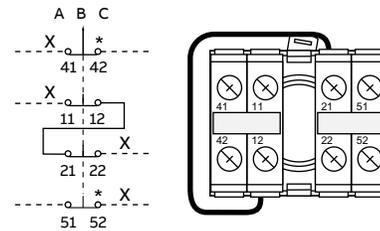
See catalog number explanation on page 7.

¹ No contact block in center position.

Center position connection detail



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



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

Contact functions

Block positions as seen from operator front.

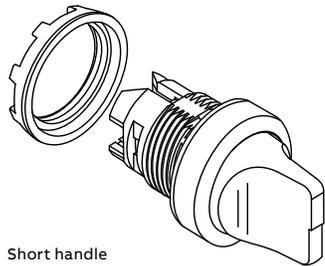
Handle position	Left block	Right block
A	X	O
B	O	O
C	O	X

O = not actuated (normal state)

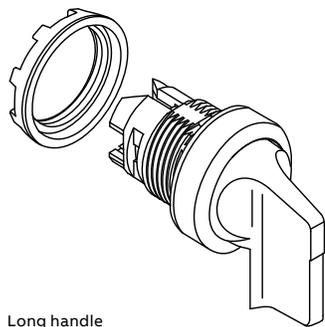
X = actuated (changed state)

Selector switches, three position

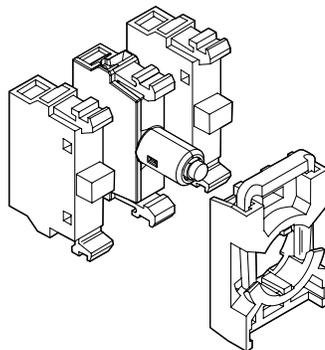
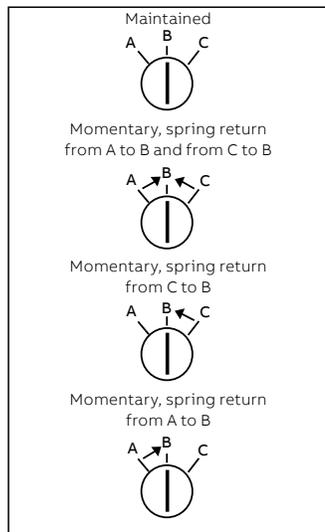
Illuminated¹



Short handle



Long handle



Selector switches, 3 position, illuminated¹

Options	Catalog number characters				
Short/3-main	M	3	S	S	1 -
Short/spring return to B	M	3	S	S	2 -
Short/main A&B/spring return C to B	M	3	S	S	3 -
Long/3-main	M	3	S	S	4 -
Long/spring return to B	M	3	S	S	5 -
Long/main A&B/spring return C to B	M	3	S	S	6 -
Short/main B&C/spring return A to B	M	3	S	S	7 -
Long/main B&C/Spring Return A to B	M	3	S	S	8 -
Bezel, black plastic, with holder					- 4
Bezel, chrome metal, with holder					- 6
Lamp block with integrated LED ²					7
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
Contact blocks, 2NO					- 2 0
Contact blocks, 3NO					- 3 0
Contact blocks, 1NC					- 0 1
Contact blocks, 2NC					- 0 2
Contact blocks, 3NC					- 0 3
Contact blocks, 1NO+1NC					- 1 1
Contact blocks, 2NO+1NC					- 2 1
Contact blocks, 1NO+2NC					- 1 2
Contact blocks, 1NO, gold					- 1 0 G
Contact blocks, 2NO, gold					- 2 0 G
Contact blocks, 3NO, gold					- 3 0 G
Contact blocks, 1NC, gold					- 0 1 G
Contact blocks, 2NC, gold					- 0 2 G
Contact blocks, 3NC, gold					- 0 3 G
Contact blocks, 1NO+1NC, gold					- 1 1 G
Contact blocks, 2NO+1NC, gold					- 2 1 G
Contact blocks, 1NO+2NC, gold					- 1 2 G
LED 12 V DC					- L 7
LED 24 V AC/DC					- L 8
LED 48 V AC/DC					- L 9
LED 60 V AC/DC					- L 6 0
LED 110-130 V AC					- L 1
LED 110-130 V DC					- L 1 3
LED 220 V DC					- L 2
LED 230 V AC					- L 2 3
LED 380 V AC					- L 3 8
LED 415 V AC					- L 4 1
5 block holder					- 5
30 mm black plastic adaptor ring	G	1			
30 mm chrome metal adaptor ring	G	2			

See catalog number explanation on page 7.

¹ No contact block in center position.

² Includes one diode chip integrated into lamp block.

Contact functions

Block positions as seen from operator front.

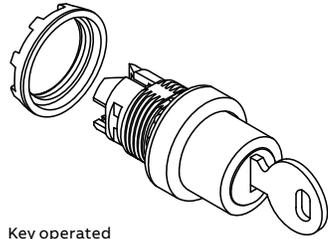
Handle position	Left block	Right block
A	X	O
B	O	O
C	O	X

O = not actuated (normal state)

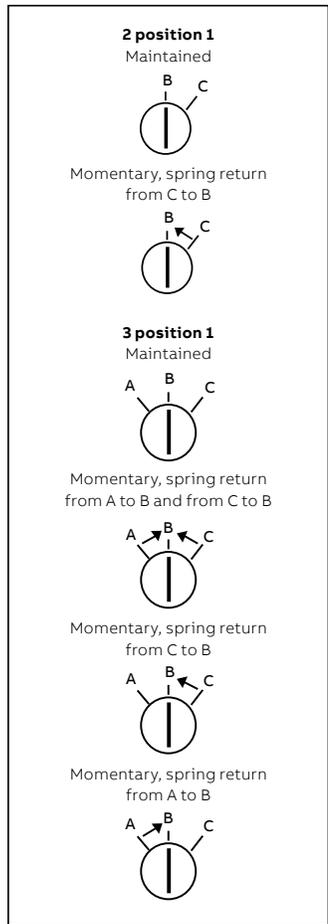
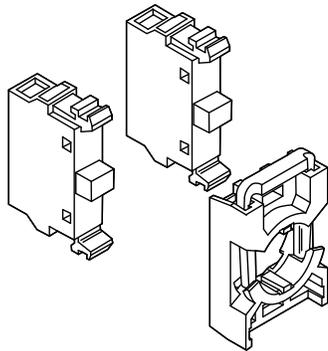
X = actuated (changed state)

Key-operated selector switches

Two and three position¹



Key operated



Key-operated selector switches, 2 and 3 position¹

Options	Catalog number characters	
2 maintained positions, key removable in B and C	M 2 S S K 1	-
2 maintained positions, key removable in B	M 2 S S K 2	-
2 positions, spring return from C to B, key removable in B	M 2 S S K 3	-
3 maintained positions, key removable in A, B and C	M 3 S S K 1	-
3 maintained positions, key removable in B	M 3 S S K 2	-
3 positions, spring return from A and C to B, key removable in B	M 3 S S K 3	-
3 positions, A and B maintained, spring return C to B, key removable in A	M 3 S S K 4	-
3 positions, A and B maintained, spring return C to B, key removable in all positions	M 3 S S K 5	-
Bezel, black plastic, with holder	-	4 0
Bezel, chrome metal, with holder	-	6 0
Key code 71	-	1
Key code 72	-	2
Key code 73	-	3
Other key code	-	4
Contact blocks, 1NO	-	1 0
Contact blocks, 2NO	-	2 0
Contact blocks, 3NO	-	3 0
Contact blocks, 1NC	-	0 1
Contact blocks, 2NC	-	0 2
Contact blocks, 3NC	-	0 3
Contact blocks, 1NO+1NC	-	1 1
Contact blocks, 2NO+1NC	-	2 1
Contact blocks, 1NO+2NC	-	1 2
Contact blocks, 1NO, gold	-	1 0 G
Contact blocks, 2NO, gold	-	2 0 G
Contact blocks, 3NO, gold	-	3 0 G
Contact blocks, 1NC, gold	-	0 1 G
Contact blocks, 2NC, gold	-	0 2 G
Contact blocks, 3NC, gold	-	0 3 G
Contact blocks, 1NO+1NC, gold	-	1 1 G
Contact blocks, 2NO+1NC, gold	-	2 1 G
Contact blocks, 1NO+2NC, gold	-	1 2 G
5 block holder	-	5
30 mm black plastic adaptor ring	G 1	
30 mm chrome metal adaptor ring	G 2	

See catalog number explanation on page 7.

¹ No contact block in center position.

Extra key

Description	Catalog Number	Reference code
Ronis 455 (key code 71)	SK 616 021-71	SK 616 021-71
Ronis 421 (key code 72)	SK 616 021-72	SK 616 021-72
Ronis 3433-E (key code 73)	SK 616 021-73	SK 616 021-73

Contact 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)

Contact functions

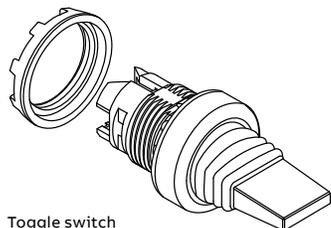
Block positions as seen from operator front.

3 Position switch

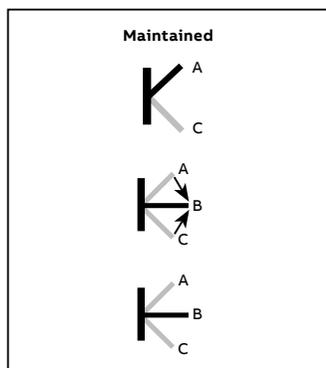
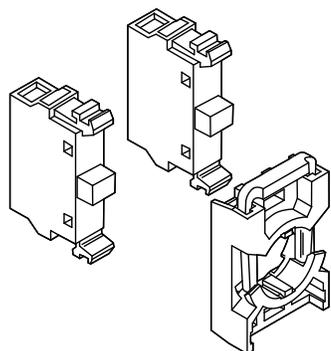
Handle position	Left block	Right block
A	O	X
B	O	O
C	X	O

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

Toggle switches



Toggle switch



Toggle switches

Options	Catalog number characters				
2 maintained positions	M	T	S	1	-
3 positions, spring return to center	M	T	S	2	-
3 maintained positions	M	T	S	3	-
Bezel, black, with holder				-	4 0
Bezel, chrome, with holder				-	6 0
Switch color – black					B
Contact blocks, 1NO					1 0
Contact blocks, 2NO					2 0
Contact blocks, 3NO					3 0
Contact blocks, 1NC					0 1
Contact blocks, 2NC					0 2
Contact blocks, 3NC					0 3
Contact blocks, 1NO+1NC					1 1
Contact blocks, 2NO+1NC					2 1
Contact blocks, 1NO+2NC					1 2
Contact blocks, 1NO, gold					1 0 G
Contact blocks, 2NO, gold					2 0 G
Contact blocks, 3NO, gold					3 0 G
Contact blocks, 1NC, gold					0 1 G
Contact blocks, 2NC, gold					0 2 G
Contact blocks, 3NC, gold					0 3 G
Contact blocks, 1NO+1NC, gold					1 1 G
Contact blocks, 2NO+1NC, gold					2 1 G
Contact blocks, 1NO+2NC, gold					1 2 G
5 block holder					5
30 mm black plastic adaptor ring	G			1	
30 mm chrome metal adaptor ring	G			2	

See catalog number explanation on page 7.

Contact 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)

Contact functions

Block positions as seen from operator front.

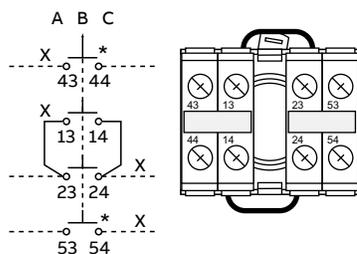
3 position switch

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

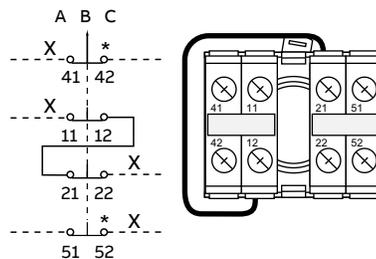
O = not actuated (normal state)

X = actuated (changed state)

Center position connection detail

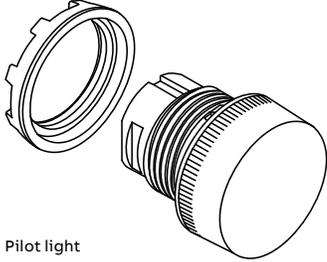


* Contacts may be N.O. or N.C.

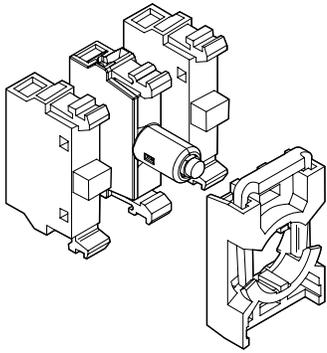


* Contacts may be N.O. or N.C.

Pilot lights



Pilot light



Pilot lights

Options	Catalog number characters			
Pilot light with light diffusing lens	M	L	1	-
With holder			-	2 0
Lens color – red			-	R
Lens color – green			-	G
Lens color – yellow			-	Y
Lens color – blue			-	L
Lens color – white			-	W
Lens color – clear			-	C
Lamp block with integrated LED ¹				7
LED 12 V DC			-	L 7
LED 24 V AC/DC			-	L 8
LED 48 V AC/DC			-	L 9
LED 60 V AC/DC			-	L 6 0
LED 110-130 V AC			-	L 1
LED 110-130 V DC			-	L 1 3
LED 220 V DC			-	L 2
LED 230 V AC				L 2 3
LED 380 V AC				L 3 8
LED 415 V AC				L 4 1
5 block holder			-	5
30 mm black plastic adaptor ring	G	1	-	
30 mm chrome metal adaptor ring	G	2	-	

See catalog number explanation on page 7.

¹ Includes one diode chip integrated into lamp block.

Assembled stations and enclosures

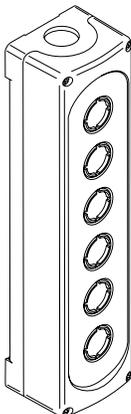
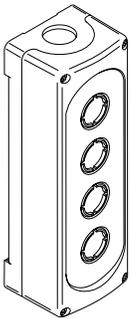
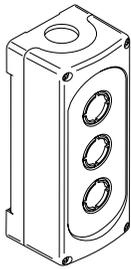
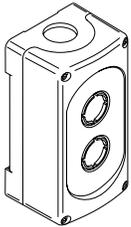


Features

- Available for 1, 2, 3, 4 and 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 and 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 and 12 stainless steel enclosures available.

Plastic enclosures, empty

Modular range, 22 mm



—
Empty plastic enclosures
 Now with stainless steel screws

Size	Color top/bottom	Catalog number
1-seat	Dark grey/light grey	MEP1-0
1-seat	Yellow/light grey	MEPY1-0
2-seat	Dark grey/light grey	MEP2-0
3-seat	Dark grey/light grey	MEP3-0
4-seat	Dark grey/light grey	MEP4-0
6-seat	Dark grey/light grey	MEP6-0

Plastic enclosures, assembled stations

1 & 2 seat, 22 mm

Modular range



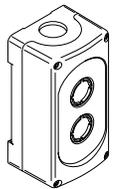
1 Position

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

Description		Catalog number			
	Pos – 1	Pos – 2	Pos – 3	Pos – 4	
Type	Twist release 40 mm E-stop	-	-	-	P1-ES
Color	Red	-	-	-	
Contacts	2 NC	-	-	-	
Name plate	EMERGENCY STOP	-	-	-	
Type	Twist release, 40 mm E-Stop	-	-	-	P1-1ES04
Color	LED, Red, 120 V AC	-	-	-	
Contacts	2 NC	-	-	-	
Name plate	EMERGENCY STOP	-	-	-	
Type	Twist release, 40 mm E-Stop	-	-	-	P1-1ES05
Color	LED, Red, 120 V DC	-	-	-	
Contacts	2 NC	-	-	-	
Name plate	EMERGENCY STOP	-	-	-	

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

Description		Catalog number			
	Pos – 1	Pos – 2	Pos – 3	Pos – 4	
Type	3-pos sel. main	-	-	-	P1-HOA
Color	Black	-	-	-	
Contacts	2 NO	-	-	-	
Name plate	HAND/OFF/AUTO	-	-	-	



2 Position

1 Position

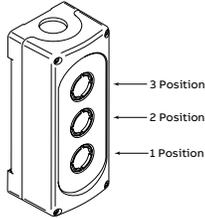
2-seat plastic enclosure, dark grey top/light grey bottom

Description		Catalog number			
	Pos – 1	Pos – 2	Pos – 3	Pos – 4	
Type	Button mom, ext.	Button mom, flush	-	-	P2-SS
Color	Red	Green	-	-	
Contacts	1 NC	1 NO	-	-	
Name plate	STOP	START	-	-	
Type	3 position selector, main	Pilot light	-	-	P2-1HOARL04
Color	Black	Red	-	-	
Contacts	2 NO	LED 120 V AC	-	-	
Name plate	HAND/OFF/AUTO	RUN	-	-	
Type	3 position selector, main	Pilot light	-	-	P2-1HOARL05
Color	Black	Red	-	-	
Contacts	2 NO	LED 120 V DC	-	-	
Name plate	HAND/OFF/AUTO	RUN	-	-	
Type	2 position selector, main	Pilot light	-	-	P2-100RL04
Color	Black	Red	-	-	
Contacts	1 NO	LED 120 V AC	-	-	
Name plate	ON/OFF	RUN	-	-	
Type	2 position selector, main	Pilot light	-	-	P2-100RL05
Color	Black	Red	-	-	
Contacts	1 NO	LED 120 V DC	-	-	
Name plate	ON/OFF	RUN	-	-	

Plastic enclosures, assembled stations

3 seat, 22 mm

Modular range



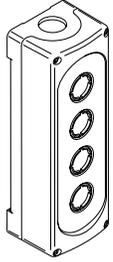
3-seat plastic enclosure, dark grey top/light grey bottom

Description	Pos – 1	Pos – 2	Pos – 3	Pos – 4	Catalog number
Type	3 position selector, main	Pilot light	Pilot light	---	P3-1SSRL04
Color	Red	Green	Red	---	
Contacts	1 NC	1 NO	LED 120 V AC	---	
Name plate	STOP	START	RUN	---	
Type	3 position selector, main	Pilot light	Pilot light	---	P3-1SSRL05
Color	Red	Green	Red	---	
Contacts	1 NC	1 NO	LED 120 V DC	---	
Name plate	STOP	START	RUN	---	
Type	2 position selector, main	Push button, momentary flush	Pilot light	---	P3-1HOARLGL04
Color	Black	Red	Green	---	
Contacts	2 NO	LED 120 V AC	LED 120 V AC	---	
Name plate	HAND/OFF/AUTO	RUN	OFF	---	
Type	2 position selector, main	Push button, momentary flush	Pilot light	---	P3-1HOARLGL05
Color	Black	Red	Green	---	
Contacts	2 NO	LED 120 V DC	LED 120 V DC	---	
Name plate	HAND/OFF/AUTO	RUN	OFF	---	
Type	3 position selector, main	Push button, momentary flush	Pilot light	---	P3-1OORLGL04
Color	Black	Red	Green	---	
Contacts	1 NO	LED 120 V AC	LED 120 V AC	---	
Name plate	ON/OFF	RUN	OFF	---	
Type	3 position selector, main	Push button, momentary flush	Pilot light	---	P3-1OORLGL05
Color	Black	Red	Green	---	
Contacts	1 NO	LED 120 V DC	LED 120 V DC	---	
Name plate	ON/OFF	RUN	OFF	---	
Type	Twist release 40 mm E-stop	3 position selector, main	Pilot light	---	P3-1HOASRL04
Color	Black	Green	Red	---	
Contacts	2 NO	1 NO	LED 120 V AC	---	
Name plate	HAND/OFF/AUTO	START	RUN	---	
Type	Twist release 40 mm E-stop	3 position selector, main	Pilot light	---	P3-1HOASRL05
Color	Black	Green	Red	---	
Contacts	2 NO	1 NO	LED 120 V DC	---	
Name plate	HAND/OFF/AUTO	START	RUN	---	
Type	5k Ohm potentiometer	Stop	Start	---	P3-1ESHOARL04
Color	Red	Black	Red	---	
Contacts	2 NC	2 NO	LED 120 V AC	---	
Name plate	EMERGENCY STOP	HAND/OFF/AUTO	RUN	---	
Type	5k Ohm potentiometer	Stop	Start	---	P3-1ESHOARL05
Color	Red	Black	Red	---	
Contacts	2 NC	2 NO	LED 120 V DC	---	
Name plate	EMERGENCY STOP	HAND/OFF/AUTO	RUN	---	
Color	Black	Red	Green	---	MEP3-SSPOT5
Contacts	Leads	1NO+1NC	1NO+1NC	---	
Name plate	Scale	(text cap)	(text cap)	---	
Name plate	ON/OFF	RUN	---	---	

Plastic enclosures, assembled stations

4 seat

Modular range



4 Position
3 Position
2 Position
1 Position

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

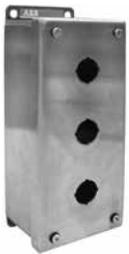
Description					Catalog number
	Pos – 1	Pos – 2	Pos – 3	Pos – 4	
Type	Push button, momentary extended	Push button, momentary flush	Pilot light	Pilot light	P4-1SSRLGL04
Color	Red	Green	Green	Red	
Contacts	1 NC	1NO	LED 120 V AC	LED 120 V AC	
Name plate	STOP	START	OFF	RUN	
Type	Push button, momentary extended	Push button, momentary flush	Pilot light	Pilot light	P4-1SSRLGL05
Color	Red	Green	Green	Red	
Contacts	1 NC	1NO	LED 120 V DC	LED 120 V DC	
Name plate	STOP	START	OFF	RUN	
Type	3 position selector, main	Push button, momentary flush	Pilot light	Pilot light	P4-1HOASRLGL04
Color	Black	Green	Green	Red	
Contacts	2 NO	1 NO	LED 120 V AC	LED 120 V AC	
Name plate	HAND/OFF/AUTO	START	OFF	RUN	
Type	3 position selector, main	Push button, momentary flush	Pilot light	Pilot light	P4-1HOASRLGL05
Color	Black	Green	Green	Red	
Contacts	2 NO	1 NO	LED 120 V DC	LED 120 V DC	
Name plate	HAND/OFF/AUTO	START	OFF	RUN	
Type	3 position selector, main	Pilot light	Pilot light	Pilot light	P4-1HOARLYLGL04
Color	Black	Green	Yellow	Red	
Contacts	2 NO	LED 120 V AC	LED 120 V AC	LED 120 V AC	
Name plate	HAND/OFF/AUTO	OFF	FAULT	RUN	
Type	3 position selector, main	Pilot light	Pilot light	Pilot light	P4-1HOARLYLGL05
Color	Black	Green	Yellow	Red	
Contacts	2 NO	LED 120 V DC	LED 120 V DC	LED 120 V DC	
Name plate	HAND/OFF/AUTO	OFF	FAULT	RUN	
Type	2 position selector, main	Pilot light	Pilot light	Pilot light	P4-1OORLYLGL04
Color	Black	Green	Yellow	Red	
Contacts	1 NO	LED 120 V AC	LED 120 V AC	LED 120 V AC	
Name plate	ON/OFF	OFF	FAULT	RUN	
Type	2 position selector, main	Pilot light	Pilot light	Pilot light	P4-1OORLYLGL05
Color	Black	Green	Yellow	Red	
Contacts	1 NO	LED 120 V DC	LED 120 V DC	LED 120 V DC	
Name plate	ON/OFF	OFF	FAULT	RUN	
Type	Twist release 40 mm E-stop	Push button, momentary extended	Push button, momentary extended	Pilot light	P4-1ESSRGL04
Color	Red	Red	Green	Red	
Contacts	2 NC	1 NC	1 NO	LED 120 V AC	
Name plate	EMERGENCY STOP	STOP	START	RUN	
Type	Twist release 40 mm E-stop	Push button, momentary extended	Push button, momentary extended	Pilot light	P4-1ESSRGL05
Color	Red	Red	Green	Red	
Contacts	2 NC	1 NC	1 NO	LED 120 V DC	
Name plate	EMERGENCY STOP	STOP	START	RUN	
Type	Twist release 40 mm E-stop	3 position selector, main	Pilot light	Pilot light	P4-1ESHOARLGL04
Color	Red	Black	Green	Red	
Contacts	2 NC	2 NO	LED 120 V AC	LED 120 V AC	
Name plate	EMERGENCY STOP	HAND/OFF/AUTO	OFF	RUN	
Type	Twist release 40 mm E-stop	3 position selector, main	Pilot light	Pilot light	P4-1ESHOARLGL05
Color	Red	Black	Green	Red	
Contacts	2 NC	2 NO	LED 120 V DC	LED 120 V DC	
Name plate	EMERGENCY STOP	HAND/OFF/AUTO	OFF	RUN	
Type	Twist release 40 mm E-stop	2 position selector, main	Pilot light	Pilot light	P4-1ESOORLGL04
Color	Red	Black	Green	Red	
Contacts	2 NC	1 NO	LED 120 V AC	LED 120 V AC	
Name plate	EMERGENCY STOP	ON/OFF	OFF	RUN	
Type	Twist release 40 mm E-stop	2 position selector, main	Pilot light	Pilot light	P4-1ESOORLGL05
Color	Red	Black	Green	Red	
Contacts	2 NC	1 NO	LED 120 V DC	LED 120 V DC	
Name plate	EMERGENCY STOP	ON/OFF	OFF	RUN	

Steel enclosures, empty
22 mm



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

Description	Height	Width	Depth	Catalog number
1-hole	3.5	3.25	2.75	MEM121-0
2-hole	5.75	3.25	2.75	MEM122-0
3-hole	8	3.25	2.75	MEM123-0
4-hole	10.25	3.25	2.75	MEM124-0
6-hole, 2x3	9.5	6.25	3	MEM126-0

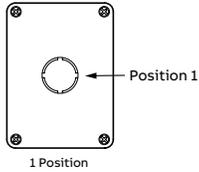


—
NEMA 12, 0.075" carbon steel, ANSI-61 gray, 22 mm

Description	Height	Width	Depth	Catalog number
1-hole	3.5	3.25	2.75	MEMX1-0
2-hole	5.75	3.25	2.75	MEMX2-0
3-hole	8	3.25	2.75	MEMX3-0
4-hole	10.25	3.25	2.75	MEMX4-0
6-hole, 2x3	9.5	6.25	3	MEMX6-0

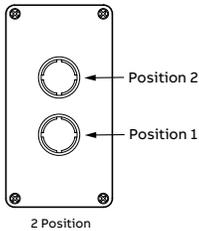
Steel enclosures, assembled stations

22 mm



1-Seat stations

Description					Type 12	Type 4x stainless
	Pos - 1	Pos - 2	Pos - 3	Pos - 4	Catalog number	Catalog number
E-STOP						
Type	40 mm Twist	-	-	-	MEM121-ES	MEMX1-ES
Color	Red	-	-	-		
Contacts	2NC	-	-	-		
Name plate	EMER. STOP	-	-	-		
E-STOP Illuminated						
Type	Twist release, 40 mm E-Stop	-	-	-	MEM121-1ES04	MEMX1-1ES04
Color	Red illuminated	-	-	-		
Contacts	2 NC with 120 V AC LED	-	-	-		
Name plate	EMERGENCY STOP	-	-	-		
Type	Twist release, 40 mm E-Stop	-	-	-	MEM121-1ES05	MEMX1-1ES05
Color	Red illuminated	-	-	-		
Contacts	2 NC with 120 V DC LED	-	-	-		
Name plate	EMERGENCY STOP	-	-	-		

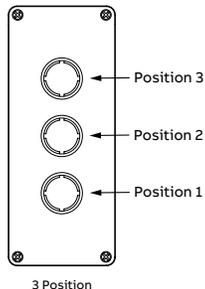


2-Seat stations

Description					Type 12	Type 4x stainless
	Pos - 1	Pos - 2	Pos - 3	Pos - 4	Catalog number	Catalog number
START, STOP						
Type	Mom, extend.	Mom, flush	-	-	MEM122-SS	MEMX2-SS
Color	Red	Green	-	-		
Contacts	1NO + 1NC	1NO + 1NC	-	-		
Name plate	Stop	Start	-	-		
HOA, RUN LIGHT						
Type	3 position selector, main	Pilot light	-	-	MEM122-1HOARL04	MEMX2-1HOARL04
Color	Black	Red	-	-		
Contacts	2 NO	LED 120 V AC	-	-		
Name plate	HAND/OFF/AUTO	RUN	-	-		
Type	3 position selector, main	Pilot light	-	-	MEM122-1HOARL05	MEMX2-1HOARL05
Color	Black	Red	-	-		
Contacts	2 NO	LED 120 V DC	-	-		
Name plate	HAND/OFF/AUTO	RUN	-	-		

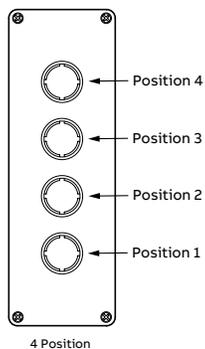
Steel enclosures, assembled stations

22 mm



3-Seat stations

Description					Type 12	Type 4x stainless
	Pos - 1	Pos - 2	Pos - 3	Pos - 4	Catalog number	Catalog number
START, STOP, RUN LIGHT						
Type	Push button, momentary extended	Push button, momentary flush	Pilot light	-	MEM123-1SSRL04	MEMX3-1SSRL04
Color	Red	Green	Red	-		
Contacts	1 NO + 1 NC	1 NO + 1 NC	LED 120 V AC	-		
Name plate	STOP	START	RUN	-		
Type	Push button, momentary extended	Push button, momentary flush	Pilot light	-	MEM123-1SSRL05	MEMX3-1SSRL05
Color	Red	Green	Red	-		
Contacts	1 NO + 1 NC	1 NO + 1 NC	LED 120 V DC	-		
Name plate	STOP	START	RUN	-		
START, STOP, E-STOP						
Type	40 mm Twist	Mom, extend.	Mom, flush	-	MEM123-SSES	MEMX3-SSES
Color	Red	Red	Green	-		
Contacts	2NC	1NO + 1NC	1NO + 1NC	-		
Name plate	EMER. STOP	STOP	START	-		



4-Seat stations

Description					Type 12	Type 4x stainless
	Pos - 1	Pos - 2	Pos - 3	Pos - 4	Catalog number	Catalog number
START, STOP, E-STOP, RUN LIGHT						
Type	Twist release, 40 mm E-Stop	Push button, momentary extended	Push button, momentary flush	Pilot light	MEM124-1ESSRL04	MEMX4-1ESSRL04
Color	Red	Red	Green	Red		
Contacts	2 NC	1 NO + 1 NC	1 NO + 1 NC	LED 120 V AC		
Name plate	EMERGENCY STOP	STOP	START	RUN		
Type	Twist release, 40 mm E-Stop	Push button, momentary extended	Push button, momentary flush	Pilot light	MEM124-1ESSRL05	MEMX4-1ESSRL05
Color	Red	Red	Green	Red		
Contacts	2 NC	1 NO + 1 NC	1 NO + 1 NC	LED 120 V DC		
Name plate	EMERGENCY STOP	STOP	START	RUN		

Technical data

Standards and approvals

IEC / EN 60947-1	Low-voltage switchgear and controlgear – part 1: general rules
IEC / EN 60947-5-1	Low-voltage switchgear and controlgear – part 5-1: control circuit devices and switching elements – electromechanical control circuit devices
IEC / EN 60947-5-5	Low-voltage switchgear and controlgear – part 5-5: control circuit devices and switching elements – electrical emergency stop device with mechanical latching function
IEC / EN 60073	Basic and safety principles for man-machine interface, marking and identification – coding principles for indicators and actuators
IEC / EN 60529	Degrees of protection provided by enclosures (IP code)
EN 50013	Low-voltage switchgear and controlgear for industrial use – terminal marking and distinctive number for particular control switches
DIN 40050-9	Road vehicles; degrees of protection (IP-code); protection against foreign objects; water and contact; electrical equipment
UL 508	Industrial control equipment
CSA C22.2 No 14	Industrial control equipment

Environmental data

Degrees of protection

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

Environmental data

Temperature

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

* With chrome plastic bezel IP66 Catalog number 1, 12, 13
Please note that specified degree of protection is for operator mounted on panel. If other items are mounted in between, please make sure that they are correctly sealed.

Technical data

Terminals

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

Tightening torque

Operators locking nut	Min. 2 Nm / Max. 2.3 Nm
Cable terminals	0.9 Nm

Material

No ozone depleting substances in the products.
All front of panel plastic components are made of polycarbonate.

PC Polycarbonate	High impact strength, good outdoor resistance. Chemical resistance (see table below)
PSU Polysulphone	Can withstand high temperatures, acids, basic solutions, alkaline compounds, oils, alcohols.
PA Polyamide	Can withstand high temperatures, aliphatic, aromatic and chlorinated hydrocarbons, esters, ketone-aldehydes, alcohols and basic solutions.
PBT	Can withstand high temperature, aliphatic and aromatic hydrocarbons, acids, basic solutions, alcohols, grease and oils
Zinc	Good corrosion resistance in inland-, sea and industrial atmosphere.
Light-alloy	Good corrosion resistance in inland-, sea and industrial atmosphere.

Chemical resistance for polycarbonate

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



Approvals

The pushbuttons, selector switches and pilot lights are approved by:

- National approval agencies: UL, CSA and China Compulsory Product Certification

For detail information please contact ABB

Technical data

Electrical data

Standard contact blocks

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

Ratings as per IEC 60947-5-1

Rated insulation voltage, U_i	690 V	
Rated thermal current, I_{th}	10 A	
Rated operational current, I_e	at: 120 V	8 A
Utilization category AC 15,	at: 230 V	6 A
	at: 400 V	4 A
	at: 690 V	2 A
Rated Operational Current, I_e	at: 24 V	5 A
utilisation category DC 13,	at: 125 V	1.1 A
	at: 250 V	0.55 A

Ratings as per UL, CSA, NEMA

	A600 AC	Q600 DC
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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
	at: 240 V	3 A	at: 250 V 0.27 A
	at: 480 V	1.5 A	at: 480 V 0.10 A
	at: 600 V	1.2 A	at: 600 V 0.10 A

Contact resistance	< 25 mΩ
Compulsory function test	at: 5V, 16 mA

Max. number of contact blocks per operator

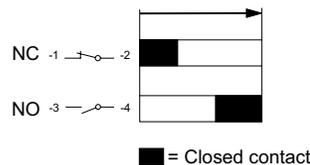
The contact blocks can be stacked in max two levels on the 3- block holder. Only one level is accepted on the 5-block holder.

Pushbutton, toggle switch, mushroom pushbutton, double pushbutton, selector switch, key-operated selector switch and emergency stop operator	6
Joystick	8

Short circuit protection

Max. fuse at 1 kA	gG 16 A
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Diagram for make-and-break contact



Micro switch block / Ratings as per IEC 60947-5-1

Rated insulation voltage, U_i	125 V	
Rated thermal current, I_{th}	3 A	
Rated operational current, I_e	at: 125 V	0.5 A
utilisation category AC 14,		
Rated operational current, I_e	at: 24 V	0.3 A
utilization category DC 13,		
Rated operational current, I_e	at: 24 V	0.1 A
utilization category DC 12,		

Minimum switching capacity

Standard contact blocks	24 V DC	5.6 mA
Gold plated contact blocks	5 V DC	12 mA
	12 V DC	1 mA
Micro switch blocks	3 V DC	1 mA
Ratings as per UL 508	125 V AC	3 A
	60 V DC	0.2 A
	48 V DC	0.1 A

Mechanical data

Mechanical life

Standard contact blocks		10 million operations
Pushbuttons, momentary mushroom pushbutton		2 million operations
Selector switches		500 000 operations
Present standard (no operation of center contact)		
With operation of center contact		250 000 operations
		150 000 operations
Maintained mushroom pushbutton, key-operated selector switch and double pushbutton		500 000 operations
Emergency stop		100 000 operations
Toggle switch		1 million operations
Joystick		500 000 operations
		400 000 operations
		300 000 operations

Technical data

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

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

Transformer block

Suitable for filament bulb 6 or 24 V AC, 1.2 W and LED 24 V.	
Rated power	1.5 W
Rated insulation voltage acc. to IEC 70 °C (DT)	Class E

LED bulbs

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

Technical data

Standards and approvals

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Toggle Switch: MTS2/MTS3 *	IP66	1, 3R, 4, 4X, 12, 13
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Utilization category AC 15,	at: 230 V	6 A
	at: 400 V	4 A
	at: 690 V	2 A
Rated operational current, I_e	at: 24 V	5 A
utilization category DC 13,	at: 125 V	1.1 A
	at: 250 V	0.55 A

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
	at: 240 V	3 A	at: 250 V	0.27 A
	at: 480 V	1.5 A	at: 480 V	0.10 A
	at: 600 V	1.2 A	at: 600 V	0.10 A

Contact resistance	< 25 mΩ
Compulsory function test	at: 5V, 16 mA

Max. number of contact blocks per operator

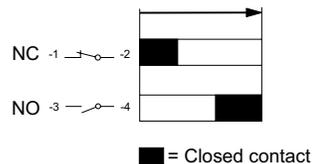
The contact blocks can be stacked in max two levels on the 3- block holder. Only one level is accepted on the 5-block holder.

Pushbutton, toggle switch, mushroom pushbutton, double pushbutton, selector switch, key-operated selector switch and emergency stop operator	6
Joystick	8

Short circuit protection

Max. fuse at 1 kA	gG 16 A
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Diagram for make-and-break contact



Micro switch block / Ratings as per IEC 60947-5-1

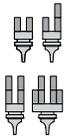
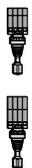
Rated insulation voltage, U_i	125 V	
Rated thermal current, I_{th}	3 A	
Rated operational current, I_e	at: 125 V	0.5 A
utilization category AC 14,		
Rated operational current, I_e	at: 24 V	0.3 A
utilization category DC 13,		
Rated operational current, I_e	at: 24 V	0.1 A
utilization category DC 12,		

Minimum switching capacity

Standard contact blocks	24 V DC	5.6 mA
Gold plated contact blocks	5 V DC	12 mA
	12 V DC	1 mA
Micro switch blocks	3 V DC	1 mA
Ratings as per UL 508	125 V AC	3 A
	60 V DC	0.2 A
	48 V DC	0.1 A

Mechanical data

Mechanical life

Standard contact blocks		10 million operations
Pushbuttons, momentary mushroom pushbutton		2 million operations
Selector switches		
Present standard (no operation of center contact)		500 000 operations
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Toggle switch		1 million operations
Joystick		500 000 operations
		400 000 operations
		300 000 operations



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elec_custserv@tnb.com

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