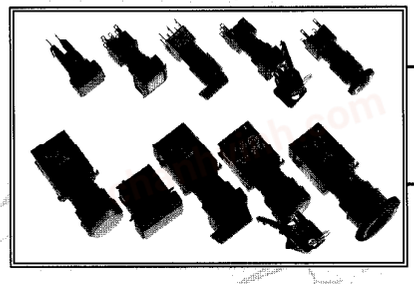
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INDUSTRIAL CONTROLS

SECTION L



A01 Pushbutton switches, indicators, rotary lever switches, keylock switches and emergency stop switches
panel cut-out Ø 16 (.630) *New !* L 2

A02 Pushbutton switches, indicators, rotary lever switches, keylock switches and emergency stop switches -
panel cut-out Ø 22 (.866) or 29,5 x 21,5 (1.160 x .846) *New !* L 11

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A01 - A02 SERIES

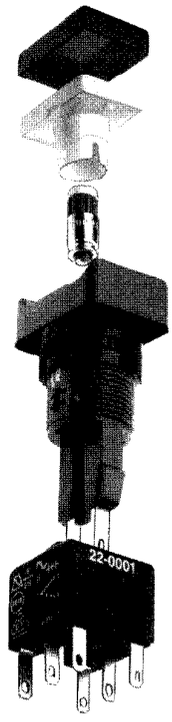
INDUSTRIAL CONTROLS

Distinctive features

The A01 and A02 series offer ranges of :

- **pushbutton switches, illuminated or not**
- **indicators**
- **2 or 3 position keylock switches**
- **2 or 3 position rotary lever switches**
- **emergency stop switches**

with rectangular, square or round operators.



Each sub-assembly has to be ordered separately.

- ❑ **Environmental protection : IP65**
- ❑ **Modular construction**
- ❑ **Electrical life : 50.000 cycles min.**
- ❑ **Screen engraving or insertable legends on request**
- ❑ **Approvals**

UL 1054 CSA 22.2

VDE 0630 CEE 24 CE

A01 series

- Panel cut-out : Ø 16 mm (.630)
- 1, 2, 3 and 4 poles
- Solder lug/quick-connect terminals
- Contacts : silver, gold plated
- Current/voltage rating :
  6A 250VAC max. - 10mA 5VAC min.
- Lamp : filament, neon or multi-chip LED

A02 series

- Panel cut-out :
  - round or square : Ø 22 mm (.866)
  - rectangular : 29,5 x 21,5 mm (1.160x.846)
- 1 and 2 poles
- Screw terminals
- Contacts : silver
- Current/voltage rating :
  12A 380VAC - 16A 250VAC max.
  25mA 5VAC min.
- Lamp : filament, neon, multi-chip LED or special multi-LED array

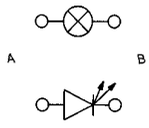
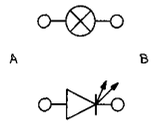
Option : end cap terminal guard. Order separately (see end of A02 series).

Packaging unit : A01 series : 25 pieces - A02 series : 10 pieces

Dimensions : first dimensions are in mm while inches are shown as bracketted numbers.

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A01 - A02 SERIES
INDUSTRIAL CONTROLS
Specifications

ELECTRICAL SPECIFICATIONS	A01	A02
• **Function** :	Momentary or alternate action	Momentary or alternate action
• **Current/voltage rating** :	10mA 5VAC min. 6A 250VAC max.	25mA 5VAC min. 12A 380VAC - 16A 250VAC max.
• **Contact gap**	1,5 mm (.059)	Double break 2 x 1,5 mm (.059)
• **Initial contact resistance** :	10mΩ max. at 1A 4VDC	10mΩ max. at 1A 4VDC
• **Insulation resistance** :	50 MΩ min.	50 MΩ min.
• **Dielectric strength** :	750V between open contacts 5KV live to accessible	2KV between open contacts 4KV live to accessible
• **Electrical life** :	50.000 cycles min.	50.000 cycles min.
• **Insulation** :	Class 2	Class 2
• **Lamp life** :	LED : 60.000 h min. to 75% relative luminosity - Filament : approx. 5.000 h Neon : approx. 10.000 h	LED : 60.000 h min. to 75 % relative luminosity - Filament : approx. 5.000 h Neon : approx. 10.000 h
• **Lamp circuit diagrams**		

GENERAL SPECIFICATIONS	A01	A02
• **Min. mechanical life** :	Momentary : 1 million cycles Alternate action : 100.000 cycles Keylock and rotary : 100.000 cycles	Momentary: 1 million cycles Alternate action : 100.000 cycles Keylock and rotary : 100.000 cycles
• **Operating force** :	2,5N - 10N depending on switch element fitted	3N - 15N depending on switch element fitted
• **Operating temperature** :	-20°C to +55°C	-20°C to +85°C
• **Solder heat resistance** : (IEC 68-2-20Tb, method 2)	350°C, 5 sec.	350°C, 5 sec.
• **Operating humidity** :	Up to 95% RH	Up to 95% RH
• **Degree of environmental protection** (IEC 529)	IP 65 front of panel IP 40 back of panel	IP 65 front of panel IP 40 back of panel
• **Lamps** :	Midget Grooved T1 3/4, filament, multi-chip LED or neon	Midget Grooved T1 3/4, filament, multi-chip LED or neon Special multi-LED array
• **Switch terminals** :	Solder/quick-connect 2,8 mm (.110)	M3 screws - wire 2 x 0,75 mm² max.
• **Lamp terminals** :	Solder/quick-connect 2,8 mm (.110)	M3 screws Flexible wire 2 x 2,5 mm² max. Rigid wire 4 mm² max.

For screen engraving or film legends, consult factory.

L

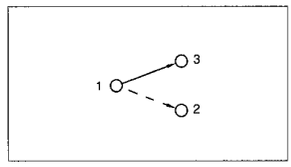
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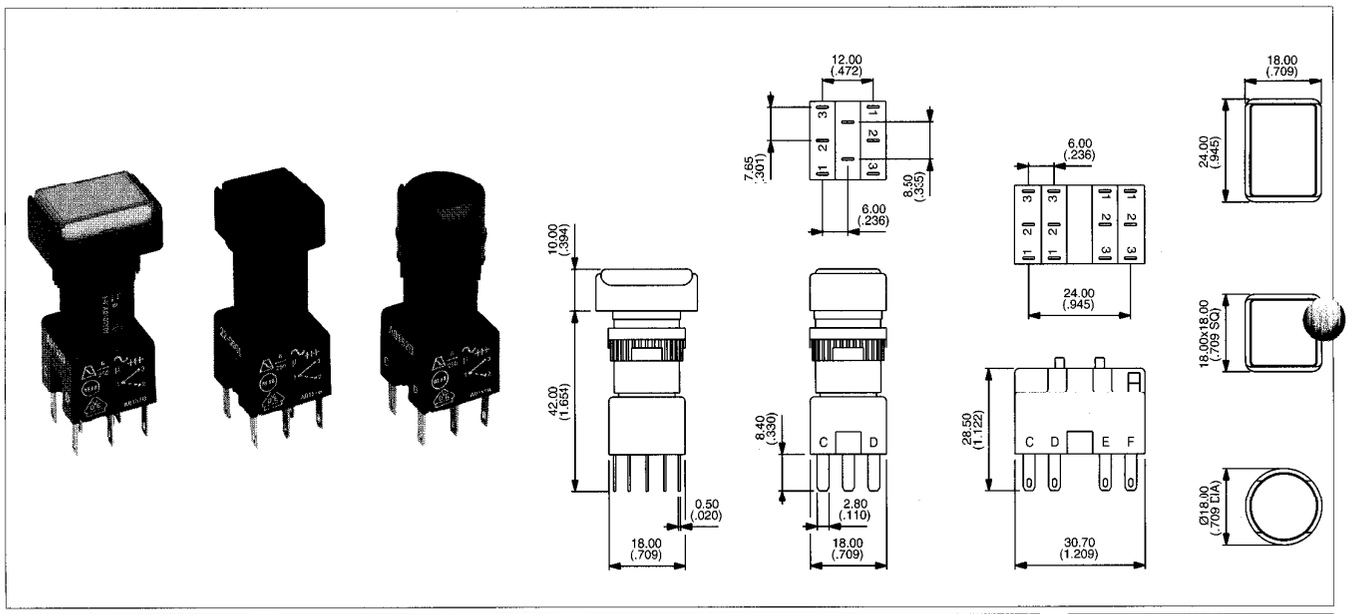
A01 SERIES

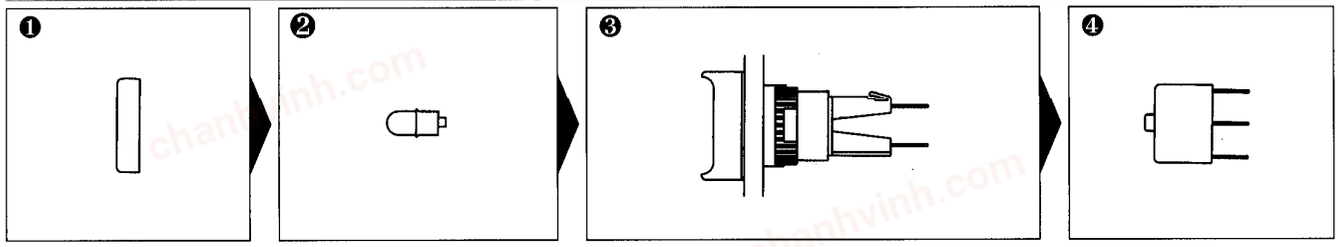
ILLUMINATED OR NON-ILLUMINATED PUSHBUTTON SWITCHES

Panel cut-out Ø 16 (.630)

A pushbutton assembly requires :
screen + lamp (if illuminated) + operator + switch block.
To order these elements, select desired model numbers from tables below.
Example : rectangular pushbutton, single pole, maintained, red screen and 12V red LED = A0161B, A0142M1, A0101X and A0151B.







Screen

Bezel	Colour	Part No
▭	black	**A0161A**
▭	red	**A0161B**
▭	amber	**A0161C**
▭	yellow	**A0161D**
▭	green	**A0161E**
▭	blue	**A0161F**
▭	clear	**A0161G**
▭	white	**A0161J**
□	black	**A0162A**
□	red	**A0162B**
□	amber	**A0162C**
□	yellow	**A0162D**
□	green	**A0162E**
□	blue	**A0162F**
□	clear	**A0162G**
□	white	**A0162J**
○	black	**A0163A**
○	red	**A0163B**
○	amber	**A0163C**
○	yellow	**A0163D**
○	green	**A0163E**
○	blue	**A0163F**
○	clear	**A0163G**
○	white	**A0163J**

Lamp

Lamp	Voltage	Part No
Filament	6.3V	**A0141A**
Filament	14V	**A0141B**
Filament	28V	**A0141C**
Filament	36V	**A0141D**
Filament	48V	**A0141E**
Filament	60V	**A0141F**
Neon	110V	**A0143G**
Neon	220V	**A0143H**
Multi-LED	6V red	**A0142L1**
Multi-LED	6V green	**A0142L2**
Multi-LED	6V amber	**A0142L3**
Multi-LED	12V red	**A0142M1**
Multi-LED	12V green	**A0142M2**
Multi-LED	12V amber	**A0142M3**
Multi-LED	12V blue	**A0142M4**
Multi-LED	12V white	**A0142M5**
Multi-LED	24V red	**A0142N1**
Multi-LED	24V green	**A0142N2**
Multi-LED	24V amber	**A0142N3**
Multi-LED	24V blue	**A0142N4**
Multi-LED	24V white	**A0142N5**
Multi-LED	48V red	**A0142P1**
Multi-LED	48V green	**A0142P2**
Multi-LED	48V amber	**A0142P3**

Operator

Pole	Bezel	Description	Part No
1 or 2	▭	Illum, momentary	**A0101Y**
1 or 2	▭	Illum, maintained	**A0101X**
1 or 2	▭	Non-illum, momentary	**A0102Y**
1 or 2	▭	Non-illum, maintained	**A0102X**
3 or 4	▭	Illum, momentary	**A0103Y**
3 or 4	▭	Illum, maintained	**A0103X**
3 or 4	▭	Non-illum, momentary	**A0104Y**
3 or 4	▭	Non-illum, maintained	**A0104X**
1 or 2	□	Illum, momentary	**A0105Y**
1 or 2	□	Illum, maintained	**A0105X**
1 or 2	□	Non-illum, momentary	**A0106Y**
1 or 2	□	Non-illum, maintained	**A0106X**
3 or 4	□	Illum, momentary	**A0107Y**
3 or 4	□	Illum, maintained	**A0107X**
3 or 4	□	Non-illum, momentary	**A0108Y**
3 or 4	□	Non-illum, maintained	**A0108X**
1 or 2	○	Illum, momentary	**A0109Y**
1 or 2	○	Illum, maintained	**A0109X**
1 or 2	○	Non-illum, momentary	**A0110Y**
1 or 2	○	Non-illum, maintained	**A0110X**
3 or 4	○	Illum, momentary	**A0111Y**
3 or 4	○	Illum, maintained	**A0111X**
3 or 4	○	Non-illum, momentary	**A0112Y**
3 or 4	○	Non-illum, maintained	**A0112X**

Switch block

No of poles	Part No
Single pole	**A0151B**
Double pole	**A0152B**
Three pole	**A0155B**
Four pole	**A0153B**

SCREEN ENGRAVING/INSERTABLE LEGENDS : contact APEM

Bezel: ▭ rectangular, □ square, ○ round, 'Illum' - illuminated, 'Non-illum' - non illuminated

L

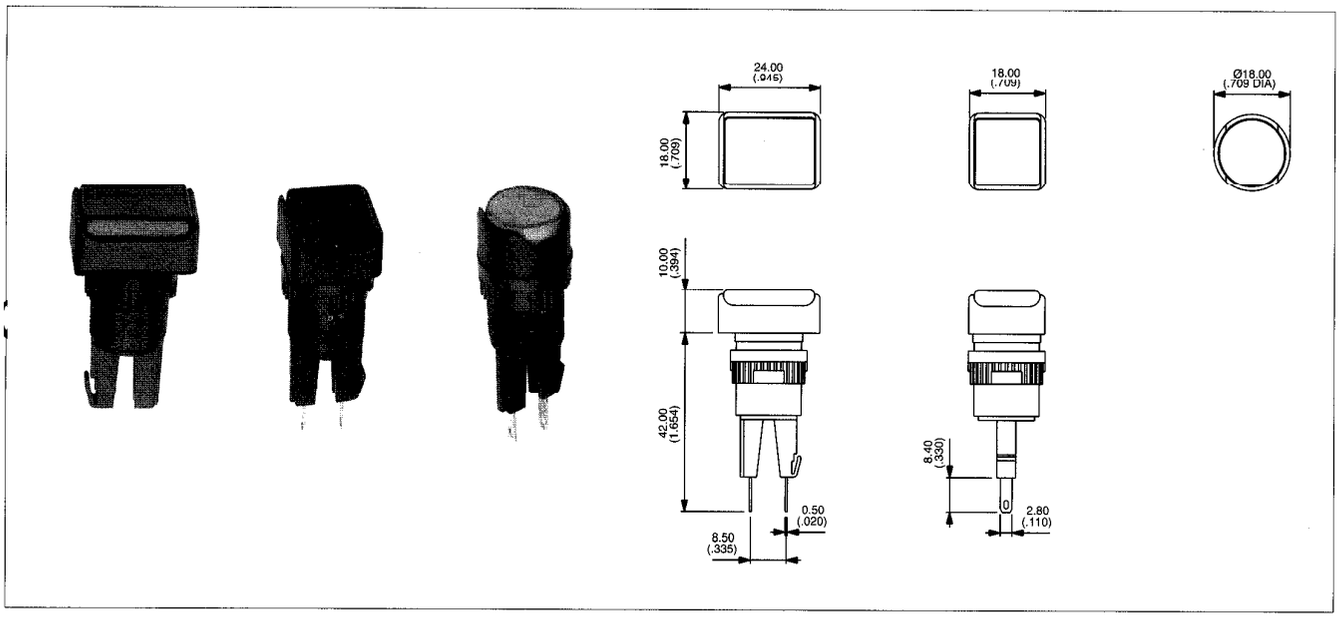
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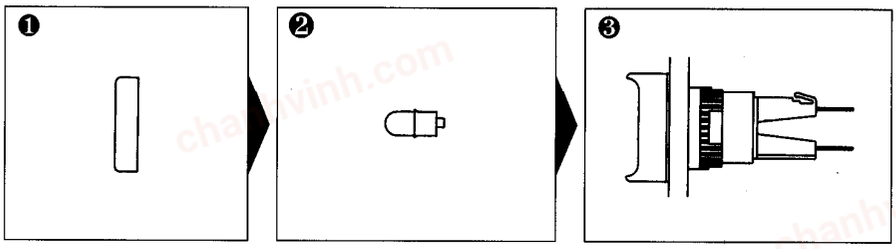
A01 SERIES

INDICATORS

Panel cut-out Ø 16 (.630)

An indicator assembly requires :
screen + lamp + operator.
To order these elements, select desired model numbers from tables below.
Example : rectangular indicator with red screen and 12V red LED = A0161B, A0142M1 and A0171.





Screen

Bezel	Colour	Part No
▭	black	**A0161A**
▭	red	**A0161B**
▭	amber	**A0161C**
▭	yellow	**A0161D**
▭	green	**A0161E**
▭	blue	**A0161F**
▭	clear	**A0161G**
▭	white	**A0161J**
□	black	**A0162A**
□	red	**A0162B**
□	amber	**A0162C**
□	yellow	**A0162D**
□	green	**A0162E**
□	blue	**A0162F**
□	clear	**A0162G**
□	white	**A0162J**
○	black	**A0163A**
○	red	**A0163B**
○	amber	**A0163C**
○	yellow	**A0163D**
○	green	**A0163E**
○	blue	**A0163F**
○	clear	**A0163G**
○	white	**A0163J**

Lamp

Lamp	Voltage	Part No
Filament	6.3V	**A0141A**
Filament	14V	**A0141B**
Filament	28V	**A0141C**
Filament	36V	**A0141D**
Filament	48V	**A0141E**
Filament	60V	**A0141F**
Neon	110V	**A0143G**
Neon	220V	**A0143H**
Multi-LED	6V red	**A0142L1**
Multi-LED	6V green	**A0142L2**
Multi-LED	6V amber	**A0142L3**
Multi-LED	12V red	**A0142M1**
Multi-LED	12V green	**A0142M2**
Multi-LED	12V amber	**A0142M3**
Multi-LED	12V blue	**A0142M4**
Multi-LED	12V white	**A0142M5**
Multi-LED	24V red	**A0142N1**
Multi-LED	24V green	**A0142N2**
Multi-LED	24V amber	**A0142N3**
Multi-LED	24V blue	**A0142N4**
Multi-LED	24V white	**A0142N5**
Multi-LED	48V red	**A0142P1**
Multi-LED	48V green	**A0142P2**
Multi-LED	48V amber	**A0142P3**

Operator

Bezel	Description	Part No
▭	Indicator	**A0171**
□	Indicator	**A0172**
○	Indicator	**A0173**

SCREEN ENGRAVING / INSERTABLE LEGENDS : contact APEM

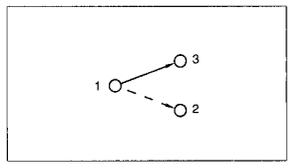
Bezel: ▭ rectangular, □ square, ○ round

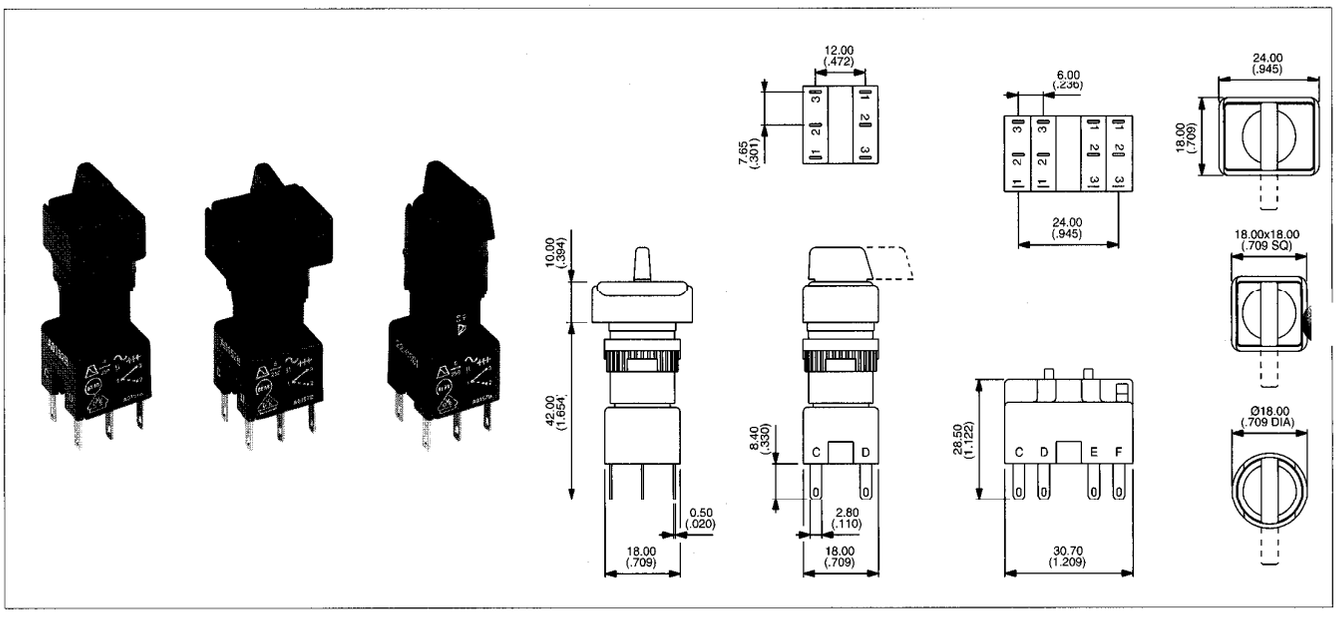
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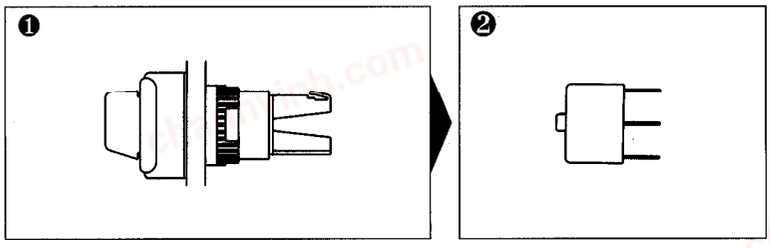
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A01 SERIES
ROTARY LEVER SWITCHES
Panel cut-out Ø 16 (.630)

A rotary lever switch assembly requires :
operator + switch block.
To order these elements, select desired model numbers from tables below.
Example : rectangular rotary switch with long lever, clockwise rotation, single pole, 2 positions, maintained = A019109 and A0151B.







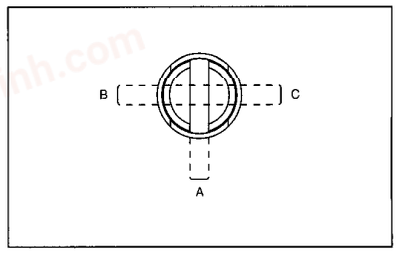
Operator

Switch block

Pole	Bezel	Description	Short lever	Long lever
1 or 2	▭	2 pos. maintained	**A019209**	**A019109•**
1 or 2	▭	2 pos. momentary	**A019210**	**A019110•**
3 or 4	▭	2 pos. maintained	**A019211**	**A019111•**
3 or 4	▭	2 pos. momentary	**A019212**	**A019112•**
1 or 2	▭	3 pos. maintained	**A019205**	**A019105**
1 or 2	▭	3 pos. momentary	**A019206**	**A019106**
1 or 2	▭	3 pos. mainL, momR	**A019207**	**A019107**
1 or 2	▭	3 pos. momL, mainR	**A019208**	**A019108**
1 or 2	□	2 pos. maintained	**A019409**	**A019309•**
1 or 2	□	2 pos. momentary	**A019410**	**A019310•**
3 or 4	□	2 pos. maintained	**A019411**	**A019311•**
3 or 4	□	2 pos. momentary	**A019412**	**A019312•**
1 or 2	□	3 pos. maintained	**A019405**	**A019305**
1 or 2	□	3 pos. momentary	**A019406**	**A019306**
1 or 2	□	3 pos. mainL, momR	**A019407**	**A019307**
1 or 2	□	3 pos. momL, mainR	**A019408**	**A019308**
1 or 2	○	2 pos. maintained	**A019609**	**A019509•**
1 or 2	○	2 pos. momentary	**A019610**	**A019510•**
3 or 4	○	2 pos. maintained	**A019611**	**A019511•**
3 or 4	○	2 pos. momentary	**A019612**	**A019512•**
1 or 2	○	3 pos. maintained	**A019605**	**A019505**
1 or 2	○	3 pos. momentary	**A019606**	**A019506**
1 or 2	○	3 pos. mainL, momR	**A019607**	**A019507**
1 or 2	○	3 pos. momL, mainR	**A019608**	**A019508**

No of poles	Part No
Single pole	**A0151B**
Double pole	**A0152B**
Three pole	**A0155B**
Four pole	**A0153B**

Lever Positions



• Lever Rotation - 2 position switches

The model numbers shown are for switches with clockwise lever rotation.
For anticlockwise rotation, replace :

09	with	**01**
10	with	**02**
11	with	**03**
12	with	**04**

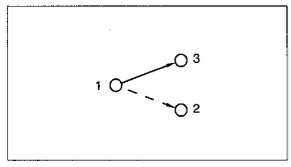
at the end of the model number.

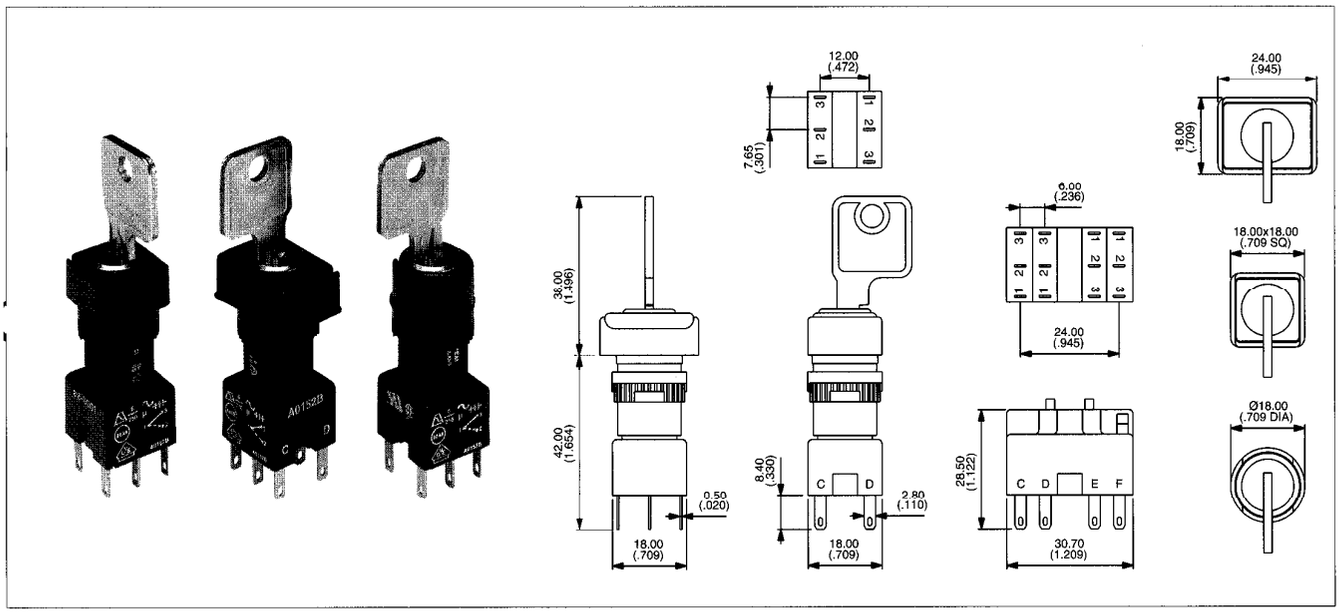
Bezel: ▭ rectangular, □ square, ○ round, 'pos' - position, 'mainL' - maintained left, 'momR' - momentary right, etc

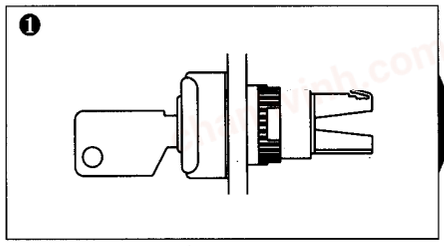
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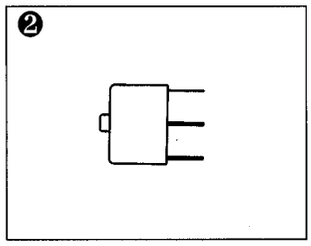
A01 SERIES
KEYLOCK SWITCHES
Panel cut-out Ø 16 (.630)

A keylock switch assembly requires :
operator + switch block.
To order these elements, select desired model numbers from tables below.
Example : rectangular keyswitch, clockwise rotation, single pole, 2 positions, maintained
= A018125 and A0151B.









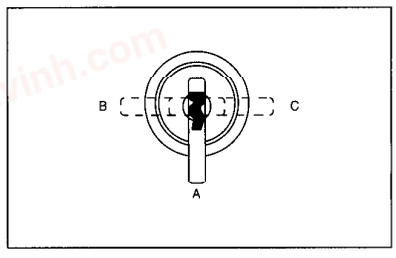
Operator

Switch block

Poles	Bezel	Description	Part No	Key removable
1 or 2	▭	2 pos. maintained	**A018123**	A
1 or 2	▭	2 pos. maintained	**A018125•**	A-B
1 or 2	▭	2 pos. momentary	**A018124•**	A
3 or 4	▭	2 pos. maintained	**A018127•**	A-B
3 or 4	▭	2 pos. momentary	**A018128•**	A
1 or 2	▭	3 pos. maintained	**A018105**	A-B-C
1 or 2	▭	3 pos. momentary	**A018106**	A
1 or 2	▭	3 pos. mainL, momR	**A018107**	A-B
1 or 2	▭	3 pos. momL, mainR	**A018108**	A-C
1 or 2	□	2 pos. maintained	**A018223**	A
1 or 2	□	2 pos. maintained	**A018225•**	A-B
1 or 2	□	2 pos. momentary	**A018224•**	A
3 or 4	□	2 pos. maintained	**A018227•**	A-B
3 or 4	□	2 pos. momentary	**A018228•**	A
1 or 2	□	3 pos. maintained	**A018205**	A-B-C
1 or 2	□	3 pos. momentary	**A018206**	A
1 or 2	□	3 pos. mainL, momR	**A018207**	A-B
1 or 2	□	3 pos. momL, mainR	**A018208**	A-C
1 or 2	○	2 pos. maintained	**A018323**	A
1 or 2	○	2 pos. maintained	**A018325•**	A-B
1 or 2	○	2 pos. momentary	**A018324•**	A
3 or 4	○	2 pos. maintained	**A018327•**	A-B
3 or 4	○	2 pos. momentary	**A018328•**	A
1 or 2	○	3 pos. maintained	**A018305**	A-B-C
1 or 2	○	3 pos. momentary	**A018306**	A
1 or 2	○	3 pos. mainL, momR	**A018307**	A-B
1 or 2	○	3 pos. momL, mainR	**A018308**	A-C

No of poles	Part No
Single pole	**A0151B**
Double pole	**A0152B**
Three pole	**A0155B**
Four pole	**A0153B**

Key Positions



• Key Rotation - 2 position switches

The model numbers shown are for switches with clockwise key rotation.
For anticlockwise rotation, replace :

25	with	**01**
24	with	**02**
27	with	**03**
28	with	**04**

at the end of the model number.

2 standard keys are supplied.
20 key barrel types available from stock.

Bezel: ▭ rectangular, □ square, ○ round, 'pos' - position, 'mainL' - maintained left, 'momR' - momentary right, etc

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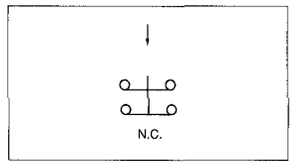
A01 SERIES

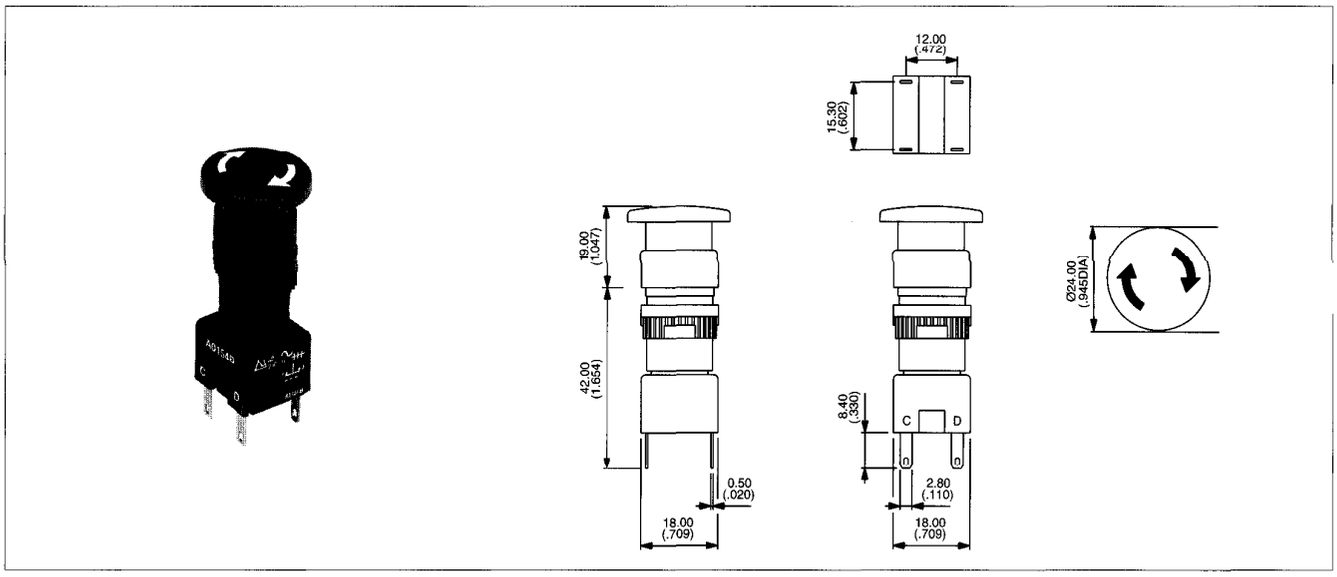
EMERGENCY STOP SWITCHES AND MUSHROOM HEAD PUSHBUTTONS

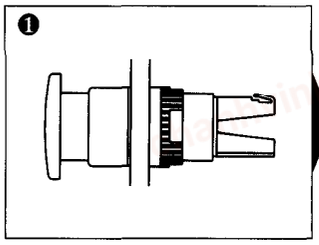
Panel cut-out Ø 16 (.630)

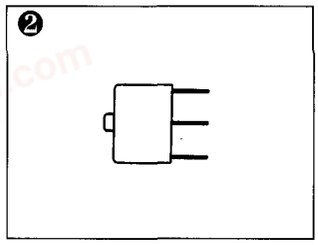
- **Prominent Ø 24 mm (.944) dia. red mushroom actuator**
- **Highly reliable positive break switch**
- **Push to shut off switch, twist to reset to ON**

An emergency stop switch assembly requires : operator + switch block.
To order, specify with single pole ou double pole positive break switch block.
Approved to UL 1054 / EN 60947.

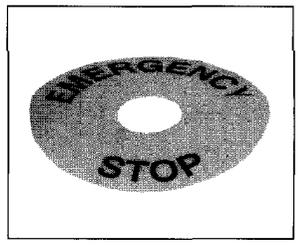








Accessory



Operator

Bezel	Description	Part No
○	Emergency stop	**A01ES**

Switch block

No of poles	Part No
Single pole	**A0150B**
Double pole	**A0154B**

60 Ø mm Self Adhesive Label

Description	Part No
Yellow label with text	**A01YL1**
Yellow label	**A01YL2**

MUSHROOM HEAD PUSHBUTTONS

L

Operator

Bezel	Description	Part No
○	Red momentary operator	**A01MMB**
○	Black momentary operator	**A01MMA**
○	Red maintained operator	**A01MXB**
○	Black maintained operator	**A01MXA**

Switch block

No of poles	Part No
Single pole	**A0151B**
Double pole	**A0152B**
Three pole	**A0155B**
Four pole	**A0153B**

For other colour variations, please contact APEM.

Momentary and maintained function mushroom head pushbutton actuators.
Momentary function version is unmarked.
(Mushroom head pushbuttons share the same dimensions as emergency stop switches).

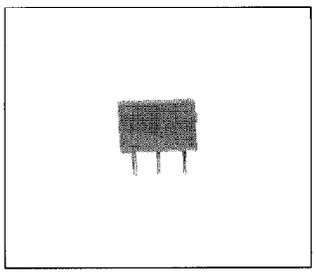
Mushroom head pushbutton assembly requires :
operator + switch block.

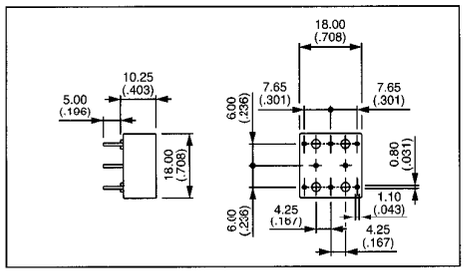
Bezel: ○ round.

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A01 SERIES
INDUSTRIAL CONTROLS
Accessories

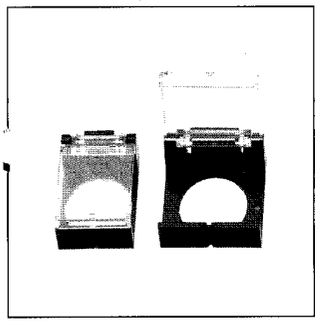
PCB SOCKET

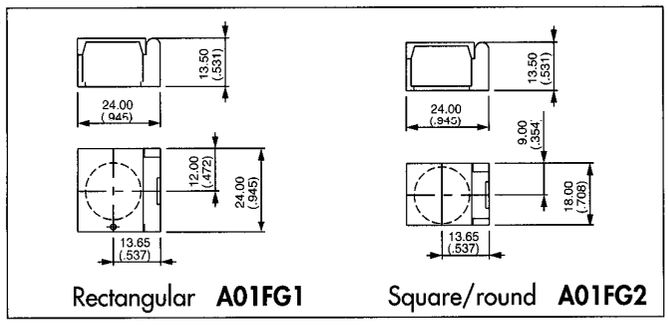




Single pole, non illuminated	A01PC1
Double pole, non illuminated	A01PC2
Single pole, illuminated	A01PC3
Double pole, illuminated	A01PC4
Indicator	A01PC5

FLAPGUARDS

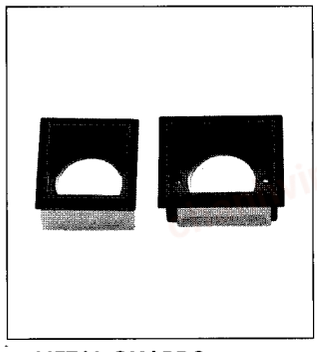


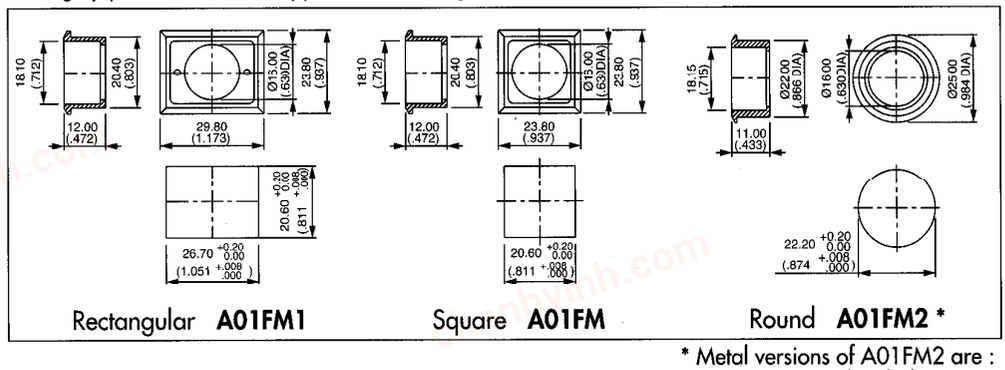


Rectangular **A01FG1** Square/round **A01FG2**

FLUSH MOUNTING BEZELS

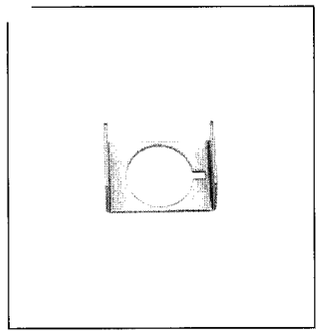
Dark grey plastic material - supplied with sealing washer

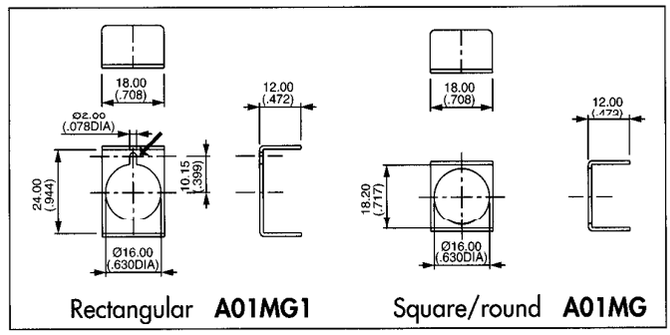




Rectangular **A01FM1** Square **A01FM** Round **A01FM2 ***

METAL GUARDS





Rectangular **A01MG1** Square/round **A01MG**

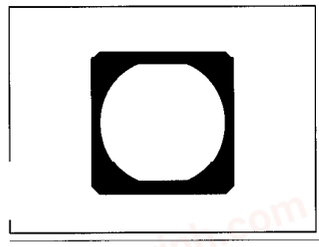
* Metal versions of A01FM2 are :
- A01FMM anodized aluminium
- A01FMMG matt black.

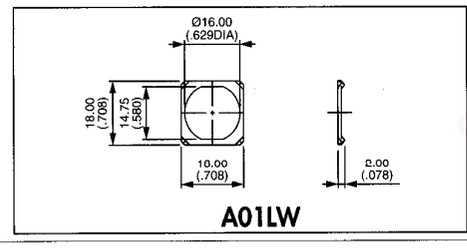
→ Slot as alternative to Ø 2 mm hole

Material : 1 mm thick aluminium

ANTI ROTATION RING

Recommended to prevent product rotation





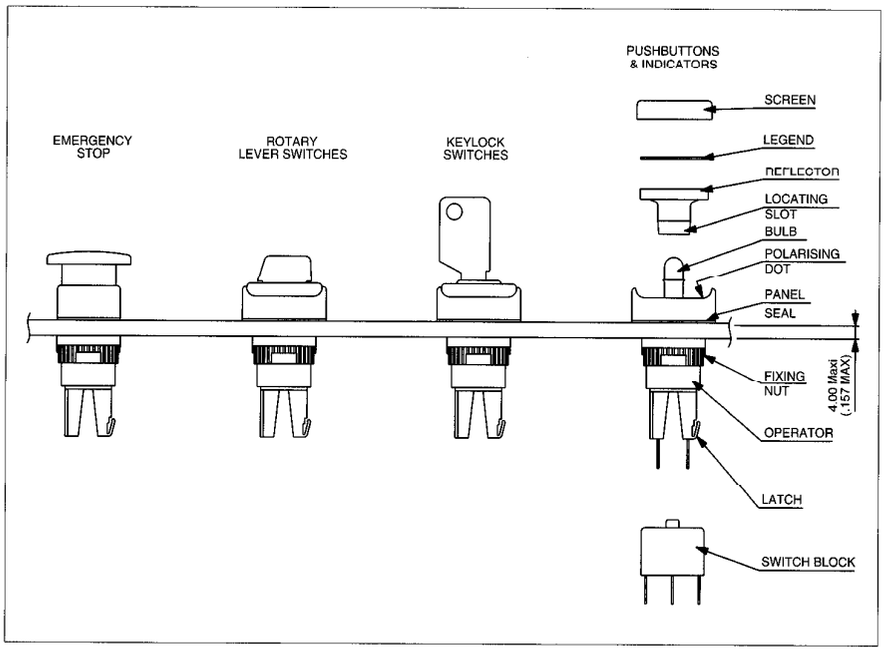
A01LW

L

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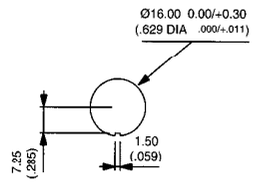
A01 SERIES
INDUSTRIAL CONTROLS
Installation - tools

Modular construction / panel mounting

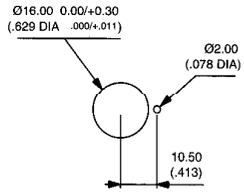


PANEL CUT-OUT

Round & square operators only



Rectangular operators only



Max. panel thickness : 4 mm (.156)

PANEL MOUNTING ASSEMBLY

- Drill/punch hole shaped as above.
- Assemble front operator through hole, fit fixing nut and tighten to a maximum torque of 0,8Nm using tool No 30-0001.
- Wire chosen switch block as required and slide onto operator until latch engages.
- Fit bulb if required using tool No 30-0002.
- Snap screen onto reflector assembly with legend in between if required and snap onto front operator TAKING CARE TO LINE UP THE LOCATING SLOT WITH THE POLARISING DOT, and not to damage the seal.

TO REMOVE BULB

Remove reflector/screen assembly by inserting tool No 30-006 between the bezel finger guard and the screen to engage the slot and pulling. Use the bulb extractor to remove the bulb.

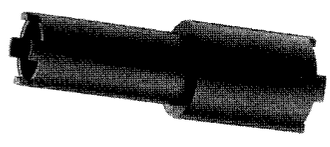
SWITCH BLOCK

To assemble switch block to front operator, TAKE CARE TO LINE UP SWITCH BLOCK WITH FRONT OPERATOR. Once in position, slide on to front operator. NB. : Ensure latch is fully engaged correctly onto the switch block.

To remove switch block, depress the latch and slide the switch block off the operator.

L

FIXING NUT KEY



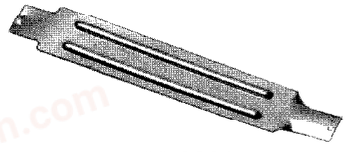
30-0001

BULB REMOVER



30-0002

SCREEN REMOVER



30-0006