

AV SERIES PUSHBUTTON SWITCHES

Distinctive features

- ☐ **Attractive, robust and durable**
 - Irremovable
 - Anti-jamming construction : reduced travel to prevent insertion of foreign parts
 - Contact and mechanism protected against crushing
 - Fire resistant
 - Long life
- ☐ **Sealed versions**
- ☐ **Degrees of protection (switches mounted on vertical panels) :**
 - standard version : IP54
 - sealed version : IP65

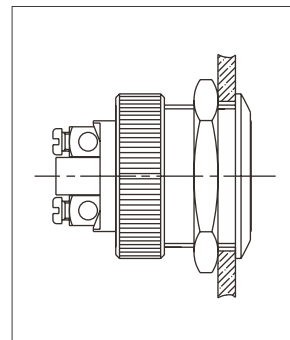


Table explaining degrees of protection (IP and IK codes)

The degree of protection is indicated by 2 letters and 2 numbers.

Example : I P 6 5



IP•• degree of protection provided by the enclosures of electric appliances according to IEC 529 and DIN 40050.

IK•• degree of protection provided by the enclosures of electric appliances against external mechanical impacts according to EN 50102 (NFC 20-015).

1st number : protection against ingress of solid objects		
IP	tests	
0		Non-protected
1		Protected against solid objects of 50 mm (1.968) and greater
2		Protected against solid objects of 12,5 mm (.492) and greater
3		Protected against solid objects of 2,5 mm (.098) and greater
4		Protected against solid objects of 1 mm (.039) and greater
5		Dust-protected (no harmful ingress)
6		Dust-tight (no ingress)

2nd number : protection against liquids		
IP	tests	
0		Non-protected
1		Protected against vertically falling water drops
2		Protected against vertically falling water drops when enclosure tilted up to 15°
3		Protected against water sprayed vertically at an angle up to 60°
4		Protected against splashing water
5		Protected against water jets from any direction

IK code : mechanical protection
The degree of mechanical protection is now defined by the letters IK according to EN 50102 of June 1995 (NFC 20-015) It is only applicable to the "Anti-vandal" switch family. See following pages.



Packaging unit : 20 or 40 pieces depending on models, except AV..4700 (10 pieces), AV06 (60 pieces), AV22P, AV22L and AV24L with anodised plunger (16 pieces).



Mounting accessories : Standard and special hardware are presented in section N.

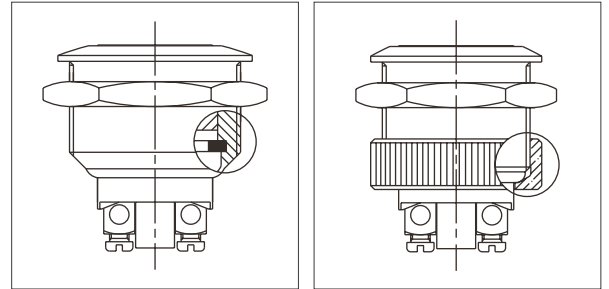
AV SERIES PUSHBUTTON SWITCHES

Distinctive features

The AV series is a large range of security pushbutton switches including 4 product families :

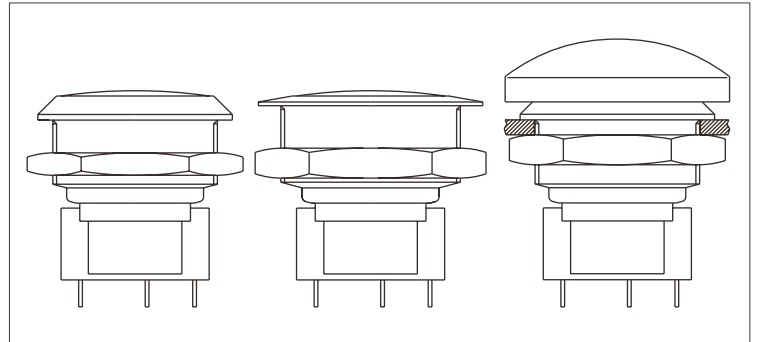
ANTI-VANDAL PUSHBUTTON SWITCHES (page K-4)

- Increased impact resistance provided by a nut or mechanical stop
- Stainless steel actuator and bushing



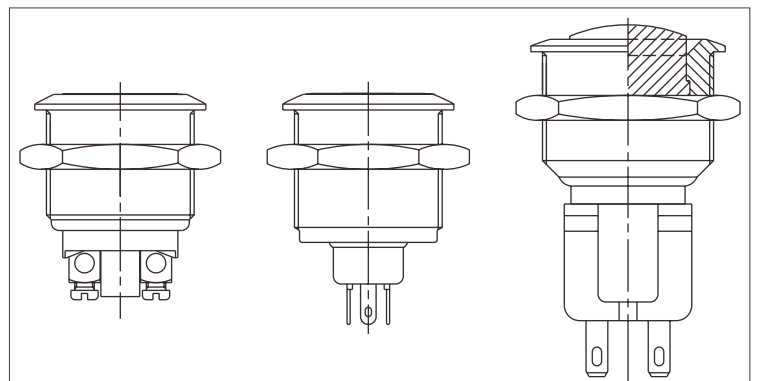
SECURITY PUSHBUTTON SWITCHES WITH LARGE ACTUATOR (page K-7)

- Ergonomic actuator dia. 20 mm (.787) or 30 mm (1.181)
- Tactile feedback
- Up to 5A 250VAC



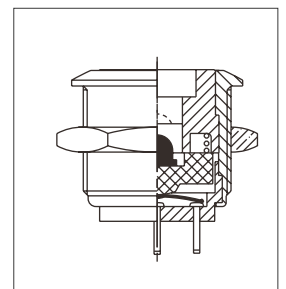
OTHER SECURITY PUSHBUTTON SWITCHES (page K-10)

- A large variety of actuator shapes, electrical functions, connections, finish and marking options



SNAP-ACTION SECURITY PUSHBUTTON SWITCHES (page K-15)

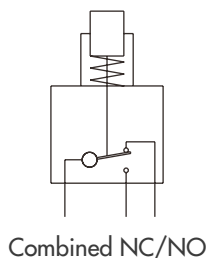
- Tactile feedback
- Illuminated or non-illuminated



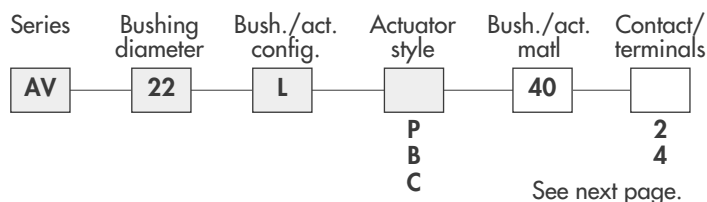
AV SERIES

SECURITY PUSHBUTTON SWITCHES WITH LARGE ACTUATOR

Bushing Ø 22 (.866)



ORDER FORMAT



SPECIFICATIONS

- Max. current/voltage rating with resistive load : 5A 250VAC
- Initial contact resistance : 100 mΩ max.
- Insulation resistance : 1.000 MΩ min. at 500VDC
- Dielectric strength : 2.000 Vrms 50 Hz min. between terminals and frame
- Electrical life : 1.000.000 cycles at 1A 250VAC
100.000 cycles at full load
- Torque : 5 Nm min.- 14 Nm max. applied to nut
- Panel thickness : 1 (.039) to 6 mm (.236) max.
- Operating temperature : -20°C to +55°C
- Mechanical life : 3.000.000 cycles
- Front panel sealing : IP65

MATERIALS

- Case : polyester, glass filled
- Contacts : silver/nickel alloy
- Bushing : stainless steel (std)
- Actuator : stainless steel (std)

CUT-OUT

- Panel cut-out : Ø 22,2 (.874) or Ø 24,2 (.952)
- Min. pitch for matrix mounting : 30 mm x 30 mm (1.181x1.181)

All model numbers below are for switches with standard bushing/actuator material.

BASIC MODEL

Flat actuator - solder lug terminals - AV22LP

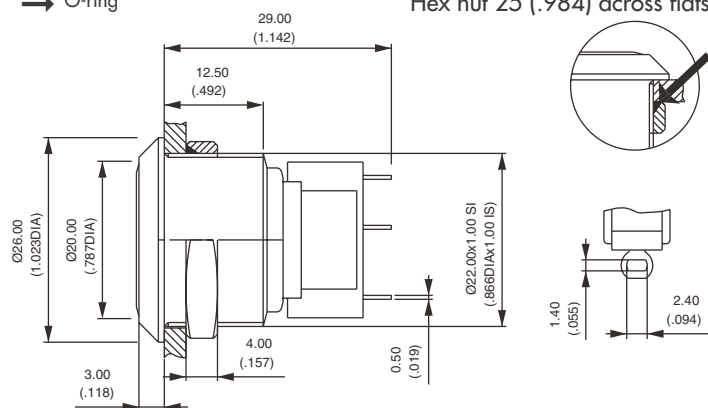


AV22LP402



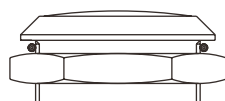
→ O-ring

Hex nut 25 (.984) across flats



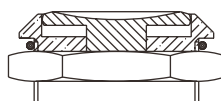
OTHER CONFIGURATIONS

Curved actuator



AV22LB402

Recessed actuator



AV22LC402

AV SERIES

SECURITY PUSHBUTTON SWITCHES WITH LARGE ACTUATOR

Bushing Ø 24 (.944) - low profile

OPTIONS



BASIC MODEL

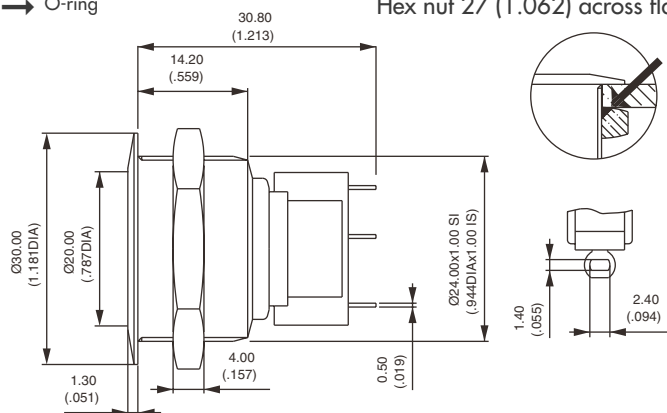
Flat actuator - solder lug terminals - AV24LP

→ O-ring

Hex nut 27 (1.062) across flats

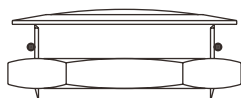


AV24LP402



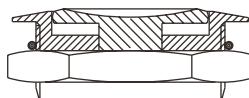
OTHER CONFIGURATIONS

Curved actuator



AV24LB402

Recessed actuator



AV24LC402

BUSHING / ACTUATOR MATERIAL

For non-standard material, replace **40** with one of the following codes.

Models with non-anodized actuator

CODE	BUSHING
40 (standard)	Stainless steel
20	Chrome plated brass

ACTUATOR
Stainless steel
Chrome plated brass

Models with anodized actuator

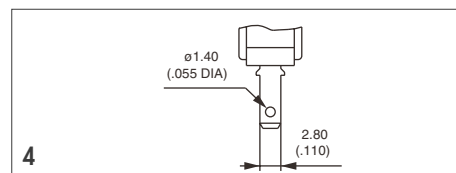
CODE	BUSHING
1•	Black chrome plated brass
2•	Chrome plated brass
4•	Stainless steel

ACTUATOR COLOUR
Replace • with colour code opposite.

Colours
2 : black
3 : pale green
5 : gold yellow
6 : red

CONTACT / TERMINALS

2 (standard)	NC/NO, solder lug terminals
4	NC/NO, quick-connect terminals

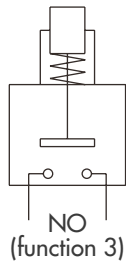


AV SERIES

SECURITY PUSHBUTTON SWITCHES

Bushing Ø 19 (.748)

MODEL
STRUCTURE



ORDER FORMAT

Series	Bush./act. config.	Case style	Function	Contact matl.	Term. type	Bush./act. material	Marking	Sealing
AV	09 19 9P 9B	100	3	C	9 2	00		K

See "options" page.

SPECIFICATIONS

- Max. current/voltage rating with resistive load : 2A 48 VDC
- Initial contact resistance : 10 mΩ max. at 1A 2V
- Insulation resistance : 1.000 MΩ min. at 500VDC
- Dielectric strength :
2.000 Vrms 50 Hz min. between terminals and frame
2.000 Vrms 50 Hz min. between terminals
- Electrical life : 10.000 cycles at full load
- Torque : 5 Nm min.- 14 Nm max. applied to nut
- Panel thickness : 1 (.039) to 11 mm (.433) max.
- Operating temperature : -20°C to +55°C
- Mechanical life : 1.000.000 cycles

MATERIALS

- Case : PBT
- Contacts : brass, silver plated (C)
- Bushing : brass, nickel plated (std)
- Actuator : brass, nickel plated (std)

CUT-OUT

- Panel cut-out :
Ø 19,2 mm (.755)
- Min. pitch for matrix mounting :
30 mm (1.181) x 30 mm (1.181)

All model numbers below are for switches with standard bushing/actuator material, without marking.

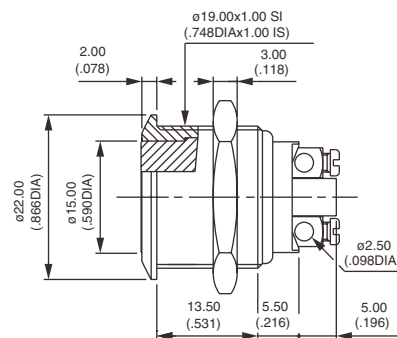
BASIC MODEL

Flat actuator - AV09..00

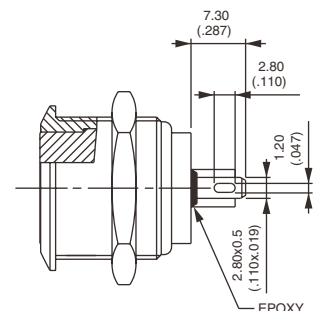


Screw terminals
AV091003C900

Solder lug /
quick-connect term.
AV091003C200

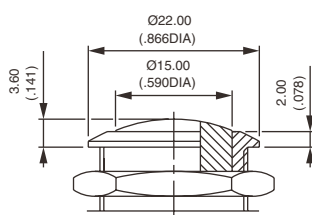


Hex nut 22 (.866) across flats



OTHER CONFIGURATIONS

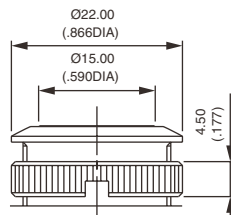
Curved actuator



Screw terminals
AV191003C900

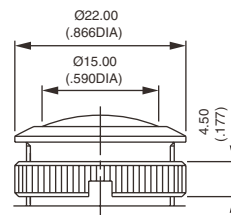
Solder lug / quick-connect terminals
AV191003C200

With knurled nut for matrix mounting 25 (.984) x 25 (.984)



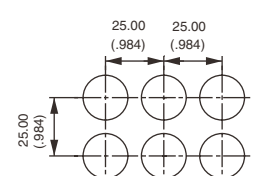
Flat actuator, screw term.
AV9P1003C900

Flat actuator, solder lug term.
AV9P1003C200



Curved actuator, screw term.
AV9B1003C900

Curved act., solder lug term.
AV9B1003C200



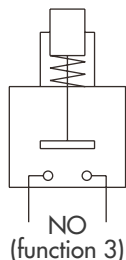
Wrench available
under P/N U1929.

AV SERIES

SECURITY PUSHBUTTON SWITCHES

Bushing Ø 22 (.866)

MODEL
STRUCTURE



ORDER FORMAT

Series	Bush./act. config.	Case style	Function	Contact matl.	Term. type	Bush./act. material	Marking	Sealing
AV	03 02 M3 M2	100	3	C	9 2	00		K

See "options" page.

SPECIFICATIONS

- Max. current/voltage rating with resistive load : 2A 48 VDC
- Initial contact resistance : 10 mΩ max. at 1A 2V
- Insulation resistance : 1.000 MΩ min. at 500VDC
- Dielectric strength :
2.000 Vrms 50 Hz min. between terminals and frame
2.000 Vrms 50 Hz min. between terminals
- Electrical life : 10.000 cycles at full load
- Torque : 5 Nm min.- 14 Nm max. applied to nut
- Panel thickness : 1 (.039) to 11 mm (.433) max.
- Operating temperature : -20°C to +55°C
- Mechanical life : 1.000.000 cycles

MATERIALS

- Case : PBT
- Contacts : brass, silver plated (C)
- Bushing : brass, nickel plated (std)
- Actuator : brass, nickel plated (std)

CUT-OUTS

- Panel cut-out :
Ø 22,2 mm (.874)
- Min. pitch for matrix mounting :
30 mm (1.181) x 30 mm (1.181)

All model numbers below are for switches with standard bushing/actuator material, without marking.

BASIC MODEL

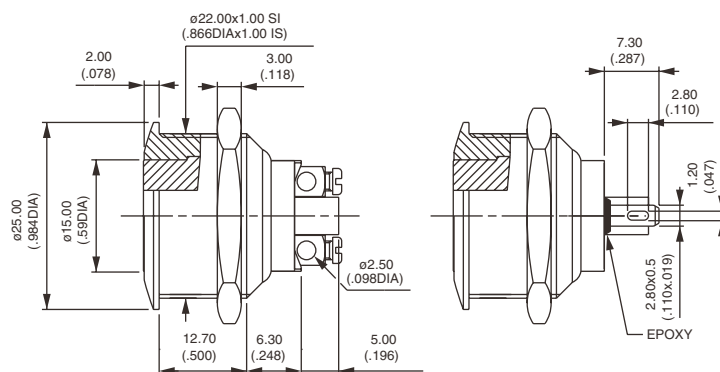
Flat actuator - AV03..00

Hex nut 25 (.984) across flats



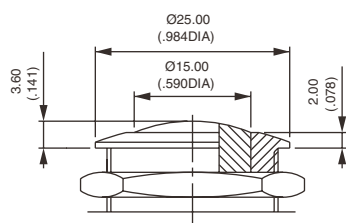
Screw terminals
AV031003C900

Solder lug /
quick-connect term.
AV031003C200



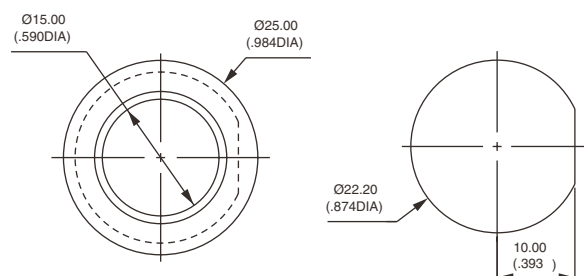
OTHER CONFIGURATIONS

Curved actuator



Screw terminals
AV021003C900
Solder lug / quick-connect terminals
AV021003C200

Flatted bushing



Flat actuator
Screw terminals
AVM31003C900
Curved actuator
Screw terminals
AVM21003C900

AV SERIES

SECURITY PUSHBUTTON SWITCHES

Bushing Ø 19 (.748) or Ø 22 (.866) - other electrical functions

MODEL
STRUCTURE

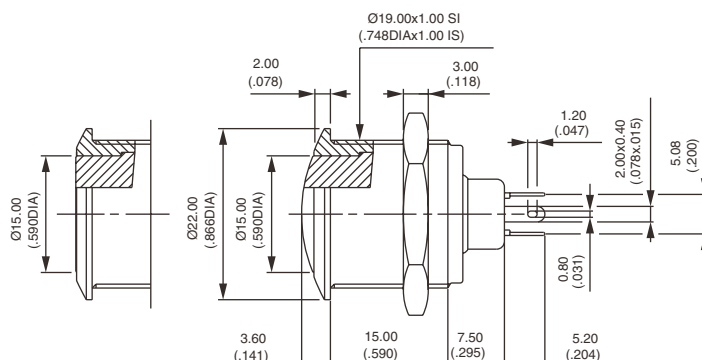
Bushing Ø 19 (748) - combined NC/NO - AV..9035

Hex nut 22 (.866) across flats

- Single pole, solder lug terminals
- Gold plated silver contacts
- Current/voltage rating with resistive load :
- max. : 1A 30V - min : 10µA 5V
- Note : a current above 100mA damages the gold plating.
- Dielectric strength : 1.000 Vrms between terminals
- 2.000 Vrms between terminals and frame
- Electrical life : 250.000 cycles at full load
- Mechanical life : 1.000.000 cycles
- Further specifications : see previous page.

Flat actuator
AV099035D200

Curved actuator
AV199035D200



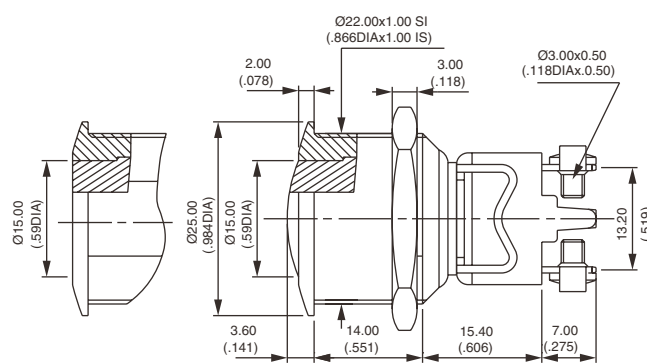
Bushing Ø 22 (.866) - Normally closed (NC) - AV..1200

Hex nut 25 (.984) across flats

- Single pole, screw terminals, without marking
- Silver plated copper contacts (C)
- Max. current/voltage rating with resistive load :
2A 250VAC - 3A 125VAC - 2,5A 24VDC
- Dielectric strength :
2.000 Vrms 50 Hz min. betw. terminals and frame
2.000 Vrms. 50 Hz min. between terminals
- Electrical life : 100.000 cycles at 0,3A 24VAC or DC
10.000 cycles at full load
- Further specifications : see previous page.

Flat actuator
AV031202C00

Curved actuator
AV021202C00

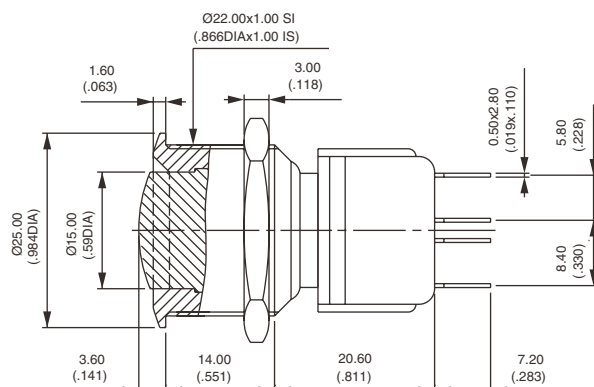


Bushing Ø 22 (.866) - alternate action - AV..4700

Hex nut 25 (.984) across flats

- Double pole, solder lug/quick-connect term., curved actuator
- Silver contacts
- Max. current/voltage rating with resistive load :
3(1,5)A 250VAC - 6A 125VAC - 3A 24VAC or DC
- Dielectric strength : 3.000 Vrms min. between terminals and frame
- Electrical life : 10.000 cycles at full load
50.000 cycles at 1A 24VAC or DC
- Mechanical life : 100.000 cycles
- Further specifications : see previous page.

AV044746A200



Bushing/actuator materials, marking and sealing : see "options" on next page.

K

AV SERIES

SECURITY PUSHBUTTON SWITCHES

Options

OPTIONS

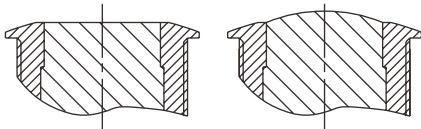
After selecting basic model number,
fill in last 3 boxes
with desired options.

Series	Bush./act. config.	Case style	Function	Contact matl.	Term. type	Bush./act. material	Marking	Sealing
AV								

BUSHING/ACTUATOR MATERIAL

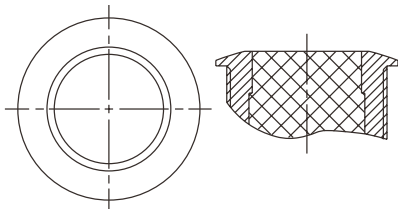
For non-standard material, replace **00** with one of the following codes.

Models with flat or curved metal actuator



CODE	BUSHING	ACTUATOR
00 (standard)	Nickel plated brass	Nickel plated brass
10	Nickel plated brass	Stainless steel
12	Nickel plated brass	Chrome plated brass
20	Chrome plated brass	Chrome plated brass
30	Chrome plated brass	Stainless steel
80	Varnished polished brass	Varnished polished brass

Models with flat thermoplastic actuator



CODE	BUSHING	ACTUATOR COLOUR
0• (standard)	Nickel plated brass	Replace • with
2•	Chrome plated brass	colour code
8•	Varnished polished brass	opposite.

Colours

1 : blue
2 : black
3 : green
4 : grey
5 : yellow
6 : red
7/1 : white
9 : orange

MARKING

For **flat or curved actuator**.

Not available on model AV031202C00.

- by engraving on brass actuator (stainless steel on request)
- by hot stamping on thermoplastic actuator.

Select an option from each of the two tables below.

TYPE OF MARKING

CODE	TYPE
0 to 9	Numbers 0 to 9
X	Symbol *
Y	Symbol #
A to N	Letters A to N
P to W	Letters P to W
O	Letter O

Letter O : same code and same design as number 0.

For special symbols, consult factory.
Minimum order : 500 pieces

COLOUR OF MARKING

CODE	COLOUR
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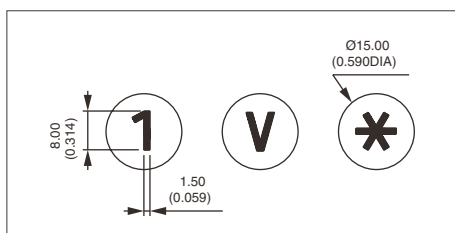
Brass actuator

0 (standard)	Same as finish
2	Black

Note : a finished product supplied in version "0" cannot be modified to version "2".

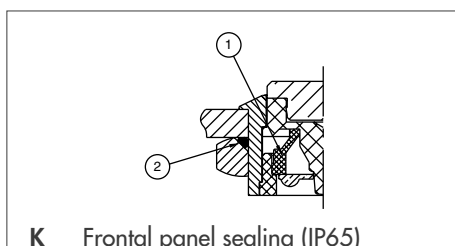
Thermoplastic actuator

2	Black
7	White



SEALING

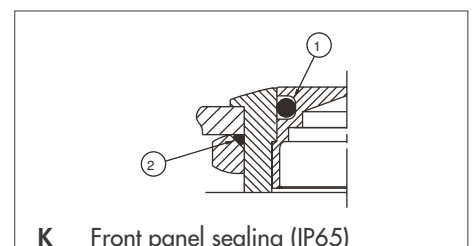
Blank No sealing



K Frontal panel sealing (IP65)

For types with bushing Ø 16

- ① elastomer membrane
② external gasket



K Front panel sealing (IP65)

For types with bushing Ø 19 or Ø 22

- ① internal gasket
② external gasket