

UG1212-A-R1



- ☐ Illuminated or non-illuminated
- ☐ Tactile feedback
- ☐ Wide variety of configurations
- ☐ Flat round actuator for optional marking
- ☐ Sealed to IP67

### ENVIRONMENTAL SPECIFICATIONS

- Front panel sealing : IP67 according to IEC 60529  
IP69K according to DIN 40050-9 (non-illuminated) with cap U5125
- Shock resistance : 100 g according to IEC 512-4, test 6c
- Vibration resistance : 10-500Hz - 10 g according to IEC 512-4, test 6d
- Salt spray : IEC 512-6, test 11f
- Robustness (non-illuminated) : IK06 according to EN 50102 (1 joule)
- Operating temperature : -40°C to +85°C

### ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load (gold plated silver contacts):  
5A 28VDC, 70.000 cycles  
0,2A 48VDC, 500.000 cycles  
0,5A 48VAC, 500.000 cycles
- Initial contact resistance : 100 mΩ max.
- Insulation resistance : 1 GΩ min. at 500VDC
- Dielectric strength : 1.500 Vrms
- Contact bounce : 10 ms

For W terminals, current has to be limited to 400mA.

### LED COMPONENT SPECIFICATIONS

| LED colour      | Forward current | Typ. forward voltage | Max. forward voltage |
|-----------------|-----------------|----------------------|----------------------|
| Super red (LOS) | 20mA            | 2,1V                 | 2,3V                 |
| Yellow (LOY)    | 20mA            | 2,1V                 | 2,3V                 |
| Green (LOG)     | 20mA            | 2,1V                 | 2,3V                 |
| Blue (LOB)      | 20mA            | 3,2V                 | 3,8V                 |
| White (LOW)     | 20mA            | 3,35V                | 4,25V                |

A resistor must be series-connected by the user.  
Resistor value =  $\frac{\text{supply voltage} - \text{LED forward voltage}}{\text{LED forward current}}$

### GENERAL SPECIFICATIONS

- Panel thickness : 1,5 mm (.059) min.  
4 mm (.157 max.)
- Total travel :  
Funct. 3 : 1,7 mm (.067) +/- 0,3 mm  
Funct. 5 : 1,3 mm (.051) +/- 0,3 mm
- Typical operating force : 6N +/- 2N
- Low level/mech. life : 1.000.000 cycles
- Torque : 1,5 Nm max. applied to nut
- Soldering : 320°C max. for 3 sec.

### MATERIALS

- Case : thermoplastic UL94-V0
- Actuator : polyamide 6/6
- Bushing/bezel : zinc die-cast (zamac), black painted
- Contacts : silver, gold plated (std)  
brass, gold plated (for option 104)
- Output wires (flying lead terminals) :  
F version : AWG20, section 0,6 mm<sup>2</sup>  
W version : AWG24, section 0,23 mm<sup>2</sup>
- LED wires :  
F version : AWG26, section 0,12 mm<sup>2</sup>  
W version : AWG24, section 0,23 mm<sup>2</sup>
- Lens : polycarbonate
- Terminal seal : epoxy

### AGENCY APPROVAL

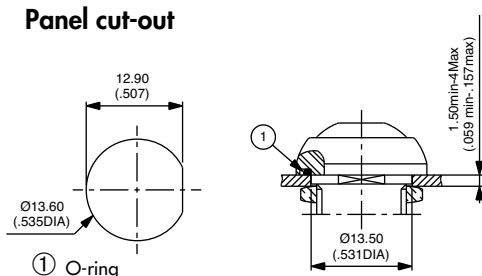


2A 125VAC/250VAC  
File E83438

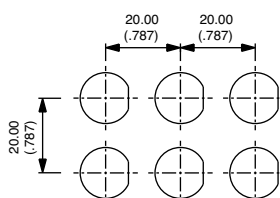
See following pages.

### MOUNTING

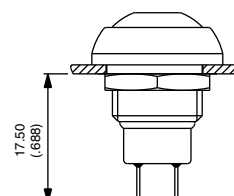
#### Panel cut-out



#### Matrix mounting



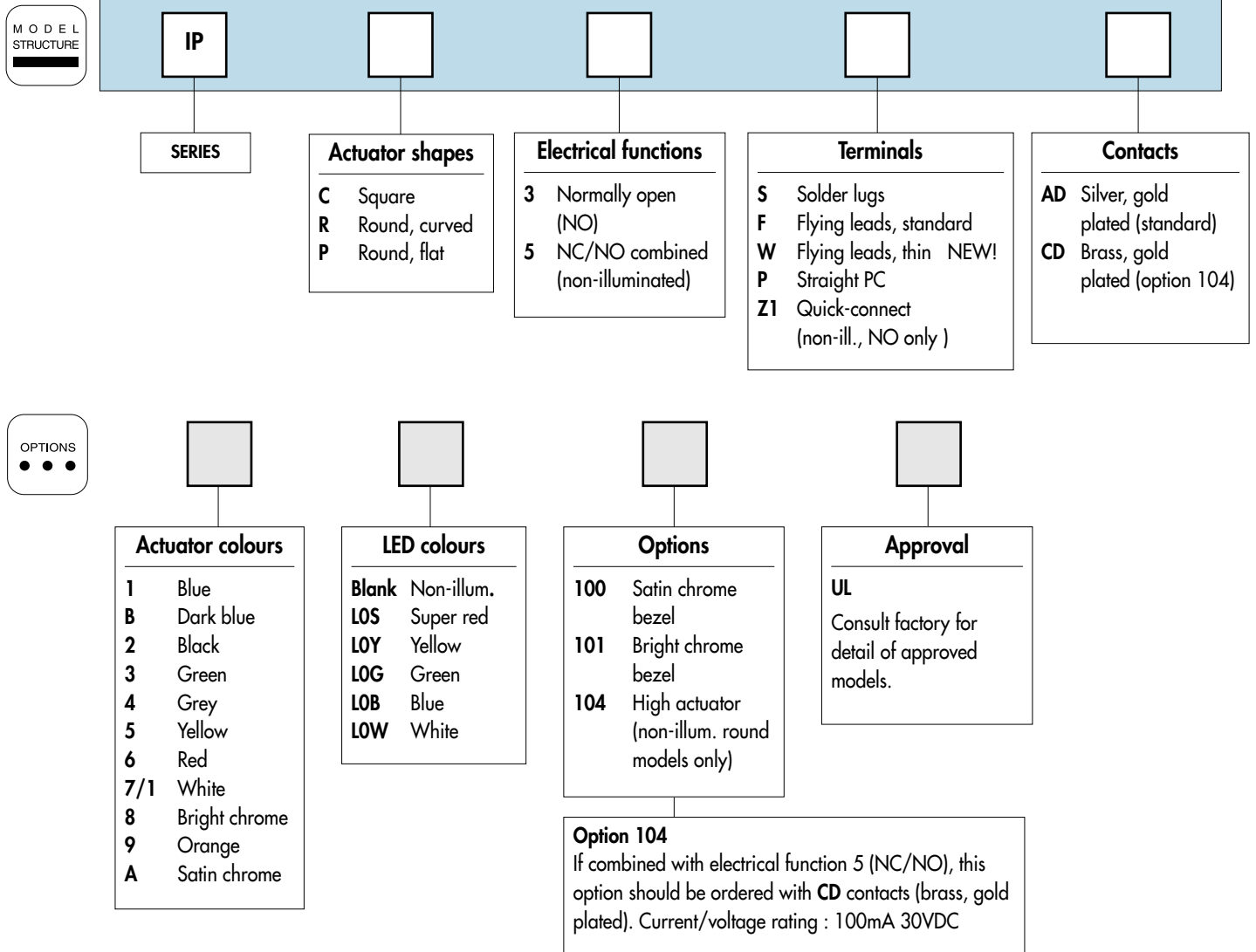
#### Back of panel space requirement



# IP series

Pushbutton switches for harsh environments - bushing Ø 12 mm - momentary

## Overview



### ABOUT THIS SERIES

On the following pages, you will find successively :  
 model structure of switches and options in the same order as in above chart

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



**NOTICE** : please note that not all combinations of above numbers are available.  
 Refer to the following pages for further information.



**A sealing boot** is available to protect the switches against frost and sand. It is presented after the IA series and in section H.



**Mounting accessories** : Standard hardware supplied : 1 hex nut 14 mm (.551) across flats and 1 O-ring.  
 Hex nut part number U166.

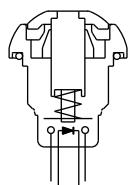


**Packaging unit** : 25 pieces

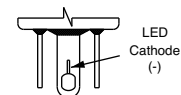
# IP series

Pushbutton switches for harsh environments - bushing Ø 12 mm - momentary

Square - illuminated



- High brightness illumination
- Five LED colours
- Tin plated LED terminals



MODEL  
STRUCTURE



Shown with standard flying lead terminals.

## Solder lug terminals



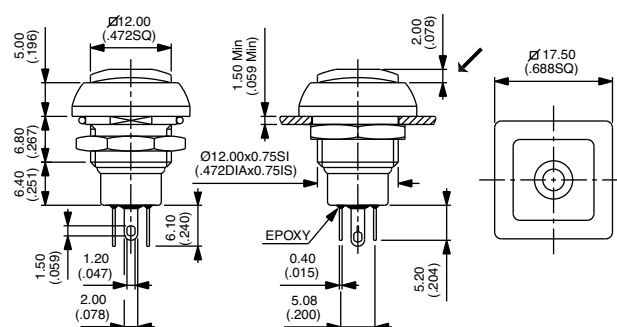
IPC3SAD



Normally Open

Also available with straight PC terminals : **IPC3PAD**  
LED colour is indicated by the bottom of the switch.

→ Flat



## Sealed flying lead terminals



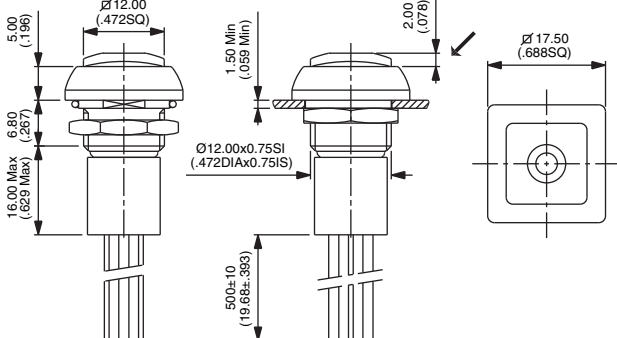
IPC3FAD



Normally Open

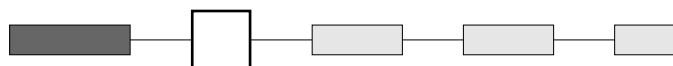
For THIN flying leads, replace F with W.

→ Flat



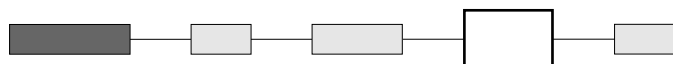
Wire colours : black : NO contact, red : LED anode(+), blue : LED cathode(-)

## ACTUATOR COLOURS



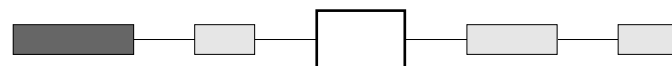
1 : blue - B : dark blue - 2 : black - 3 : green - 4 : grey  
5 : yellow - 6 : red - 7/1 : white - 8 : bright chrome  
9 : orange - A : satin chrome

## OPTIONS



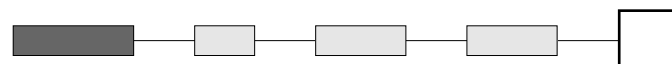
100 : Satin chrome bezel  
101 : Bright chrome bezel

## LED COLOURS



LOS : super red - LOY : yellow - LOG : green - LOB : blue  
LOW : white

## APPROVAL

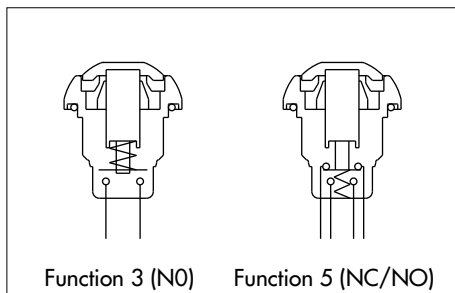


UL  
Consult factory for details of approved models. To order switches marked UL, complete above box with "UL".

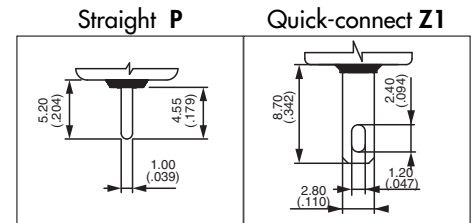
# IP series

Pushbutton switches for harsh environments - bushing Ø 12 mm - momentary

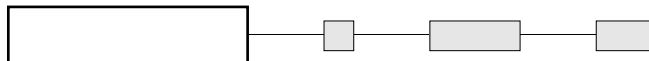
Square - non-illuminated



- Double function (NC/NO combined) with a short behind-panel depth



## MODEL STRUCTURE



Shown with standard flying lead terminals.

## Solder lug terminals



IPC3SAD



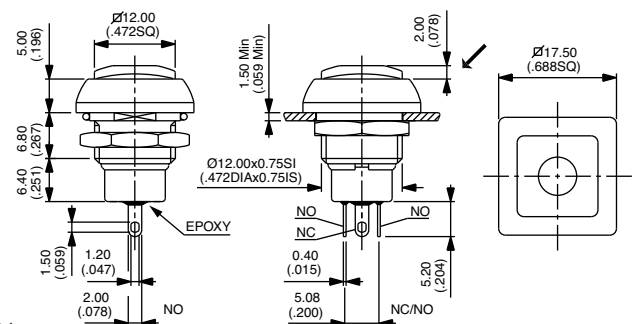
Normally Open

IPC5SAD



NC/NO combined

→ Flat



Also available with straight PC terminals : **IPC3PAD** (NO) or **IPC5PAD** (NC/NO) and quick-connect terminals : **IPC3Z1AD** (NO only)

## Sealed flying lead terminals



IPC3FAD



Normally Open

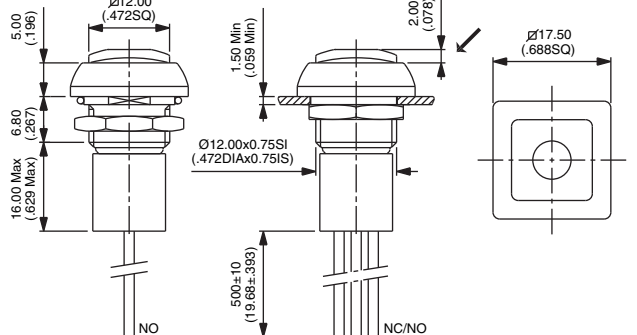
IPC5FAD



NC/NO combined

For THIN flying leads, replace F with W.

→ Flat



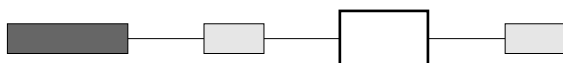
Wire colours (NC/NO) : black : NO, blue : NC

## ACTUATOR COLOURS



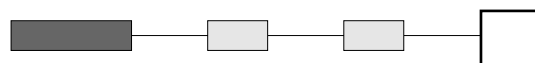
1 : blue - B : dark blue - 2 : black - 3 : green - 4 : grey - 5 : yellow - 6 : red - 7/1 : white - 8 : bright chrome  
9 : orange - A : satin chrome

## OPTIONS



100 : Satin chrome bezel  
101 : Bright chrome bezel

## APPROVAL



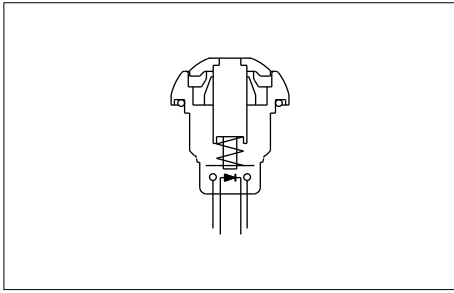
UL

Consult factory for details of approved models. To order switches marked UL, complete above box with "UL".

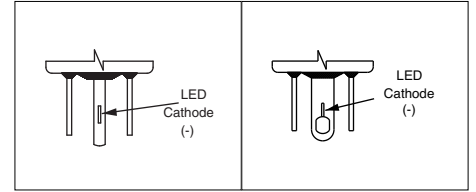
# IP series

Pushbutton switches for harsh environments - bushing Ø 12 mm - momentary

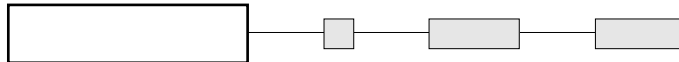
Round - illuminated



- High brightness illumination
- Five LED colours
- Tin plated LED terminals



MODEL  
STRUCTURE



Shown with standard flying lead terminals.

## Solder lug terminals



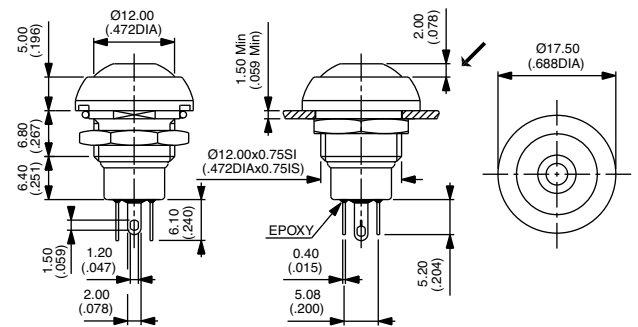
IPR3SAD



Normally Open

Also available with straight PC terminals : **IPR3PAD**  
LED colour is indicated by the bottom of the switch.

→ Flat



## Sealed flying lead terminals



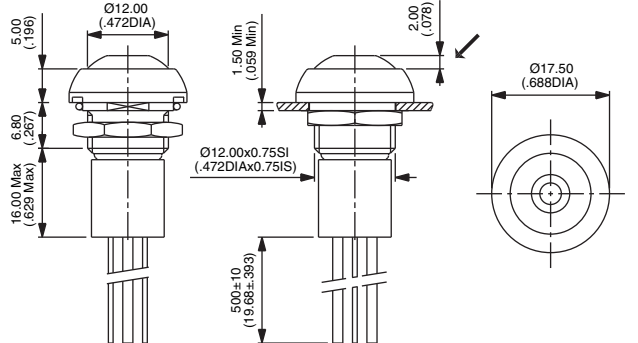
IPR3FAD



Normally Open

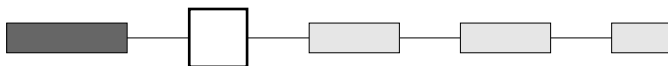
For THIN flying leads, replace F with W.

→ Flat



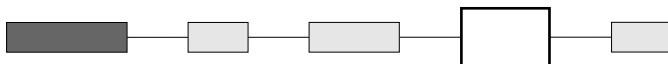
Wire colours : black : NO contact, red : LED anode(+), blue : LED cathode(-)

## ACTUATOR COLOURS



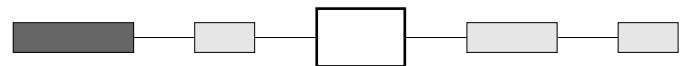
1 : blue - B : dark blue - 2 : black - 3 : green - 4 : grey  
5 : yellow - 6 : red - 7/1 : white - 8 : bright chrome  
9 : orange - A : satin chrome

## OPTIONS



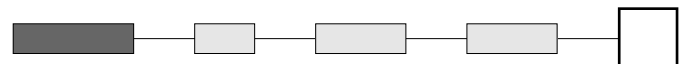
100 : Satin chrome bezel  
101 : Bright chrome bezel

## LED COLOURS



LOS : super red - LOY : yellow - LOG : green - LOB : blue  
LOW : white

## APPROVAL

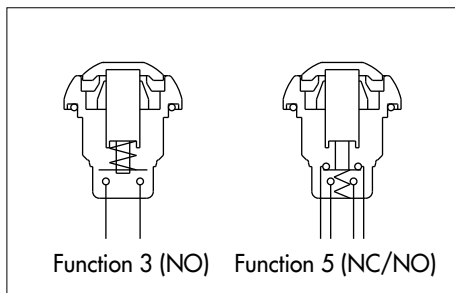


UL  
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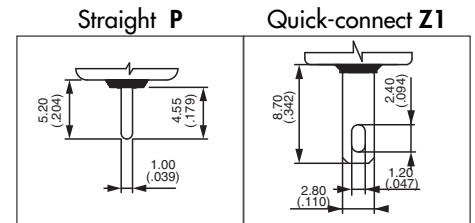
# IP series

Pushbutton switches for harsh environments - bushing Ø 12 mm - momentary

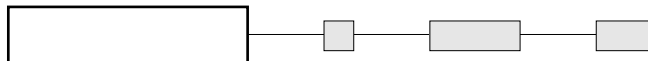
Round - non-illuminated



- Double function (NC/NO combined) with a short behind-panel depth



## MODEL STRUCTURE



Shown with standard flying lead terminals.

Actuator marking available on IPP models (symbol 10 mm max.). On request.

## Solder lug terminals

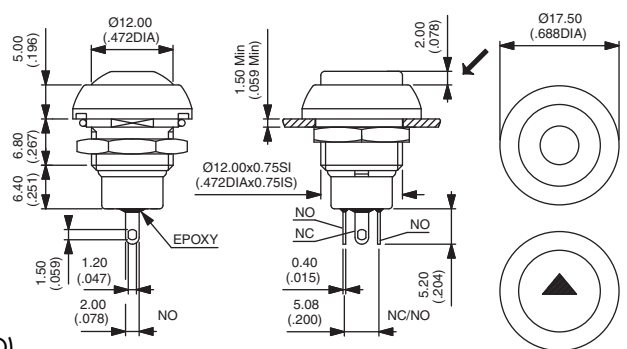


Curved actuator, NO  
**IPR3SAD**  
Curved actuator, NC/NO  
**IPR5SAD**

Flat actuator, NO  
**IPP3SAD**  
Flat actuator, NC/NO  
**IPP5SAD**



→ Flat



Also available with straight PC terminals : **IP•3PAD** (NO) or **IP•5PAD** (NC/NO) and quick-connect terminals : **IP•3Z1AD** (NO only)

## Sealed flying lead terminals



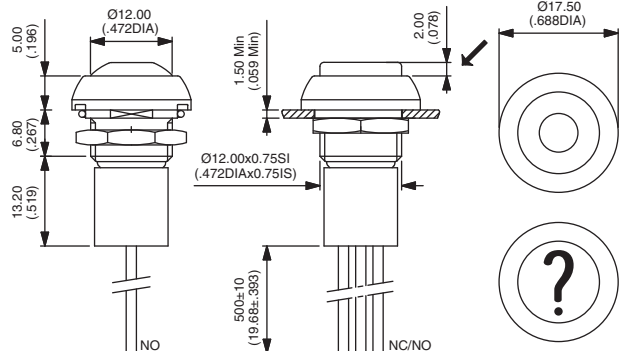
Curved actuator, NO  
**IPR3FAD**  
Curved actuator, NC/NO  
**IPR5FAD**

Flat actuator, NO  
**IPP3FAD**  
Flat actuator, NC/NO  
**IPP5FAD**



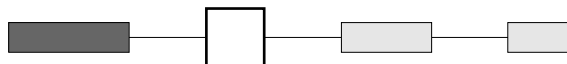
For THIN flying leads, replace F with W.

→ Flat



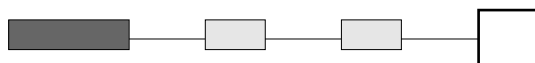
Wire colours (NC/NO) : black : NO, blue : NC

## ACTUATOR COLOURS



1 : blue - **B** : dark blue - 2 : black - 3 : green - 4 : grey  
5 : yellow - 6 : red - 7/1 : white - 8 : bright chrome  
9 : orange - **A** : satin chrome

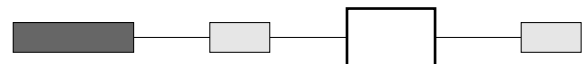
## APPROVAL



UL

Consult factory for details of approved models. To order switches marked UL, complete above box with "UL".

## OPTIONS



**100** : Satin chrome bezel  
**101** : Bright chrome bezel  
**104** : High actuator - If combined with function 5 (NC/NO), order with CD contacts (instead of AD contacts).

