

# IP series

## Latching action pushbutton switches for harsh environments

*Distinctive features and specifications*



- Latching action**  
Actuator remains in the low position when "ON".
- Illuminated and non-illuminated**
- Compact**  
Behind-panel depth less than 20 mm (.787)
- Flat round actuator for optional marking**
- Sealed to IP 67**

### ENVIRONMENTAL SPECIFICATIONS

- Degree of protection : IP 67 - See details page B36.
- 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 sw.) : IK06 according to EN 50102 (1 joule)
- Operating temperature : -40°C to +85°C

### MATERIALS

- Case : PA-6T, UL 94-V0
- Plunger : polyamide 6/6
- Bushing/bezel : zinc die-cast (zamak), black painted
- Contacts : silver, gold plated
- Multi-wire lead AWG20, section 0,6 mm<sup>2</sup>, UL approved
- LED wire : AWG26
- Lens : polycarbonate
- Terminal seal : epoxy

### ELECTRICAL AND GENERAL SPECIFICATIONS

- Max. current/voltage rating with resistive load :  
100mA 24VDC - life expectancy 200 000 cycles  
2A 125VAC - life expectancy 10 000 cycles (tested according to UL 1054)
- Initial contact resistance : 100 mΩ max.
- Insulation resistance : 1 GΩ min. at 500VDC
- Dielectric strength : 1.500 VAC rms between terminals  
1.000 VAC rms between terminals and frame
- Panel thickness : 1,5 mm (.059) min. - 5,5 mm (.217) max.
- Total travel : 2,5 mm (.098)
- Operating force : 5,5 N +/- 1N
- Contact bounce : 10 ms
- Torque : 1,5 Nm applied to nut
- Soldering : 320°C max. for 3 seconds

#### LED COMPONENT SPECIFICATIONS

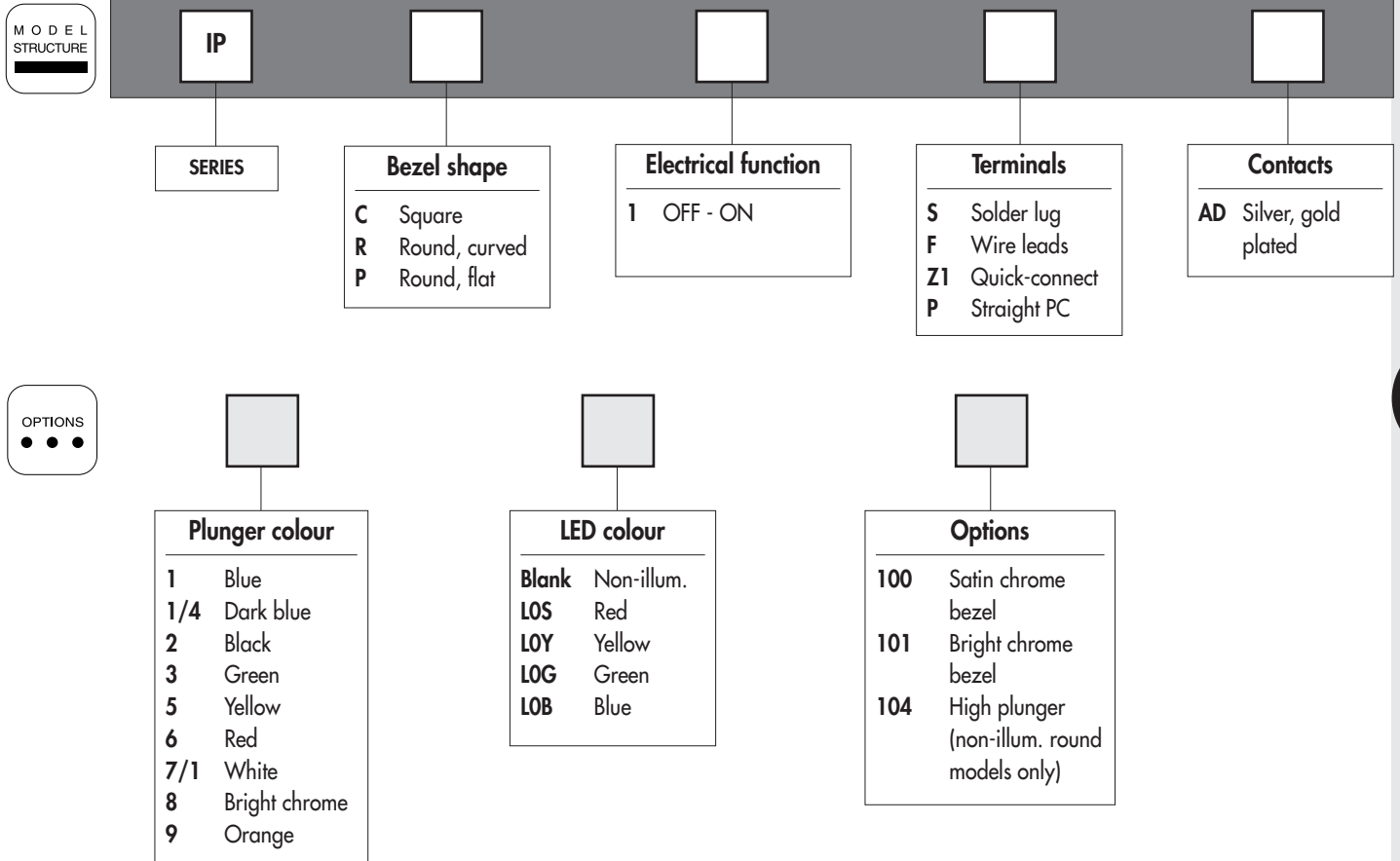
LED colour	Forward current	Forward Voltage	Max. lumin. intensity
Super red (LOS)	20mA	2V	180 mcd
Yellow (LOY)	20mA	2V	280 mcd
Green (LOG)	10mA	2V	28 mcd
Blue (LOB)	10mA	3,5V	22 mcd

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

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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 bracketted 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 (P/N U5125).  
 It is presented at the end of the IP series and in section H.



**Mounting accessories** : Standard hardware supplied : 1 hex nut 14 mm (.551) across flats and 1 O-Ring.

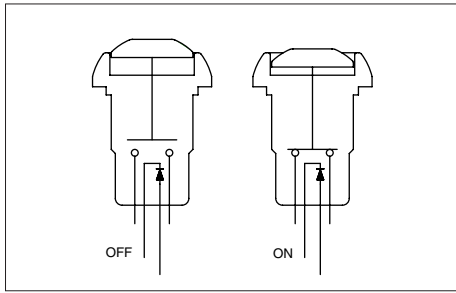


**Packaging unit** : 25 pieces

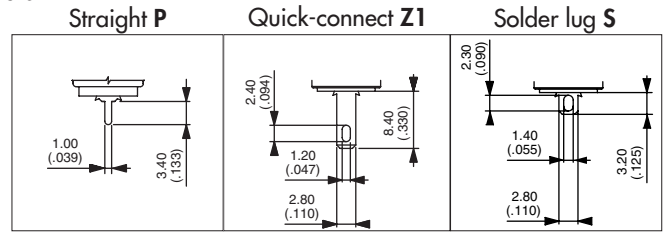
# IP series

Latching action pushbutton switches for harsh environments

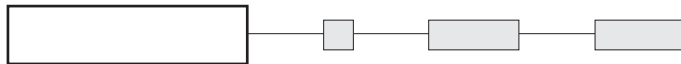
Square or round - illuminated



- Four LED colours
- Tin plated LED terminals



MODEL STRUCTURE



B

## Square models

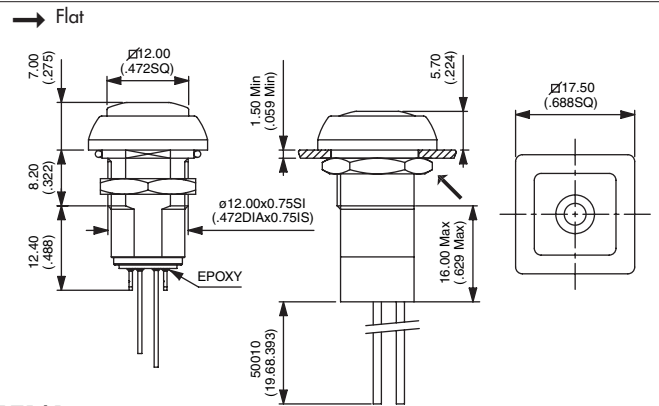


Solder lug terminals  
**IPC1SAD**

OFF - ON

Wire lead terminals  
**IPC1FAD**

OFF - ON



Also available with straight PC : **IPC1PAD** or quick-connect terminals : **IPC1Z1AD**

## Round models

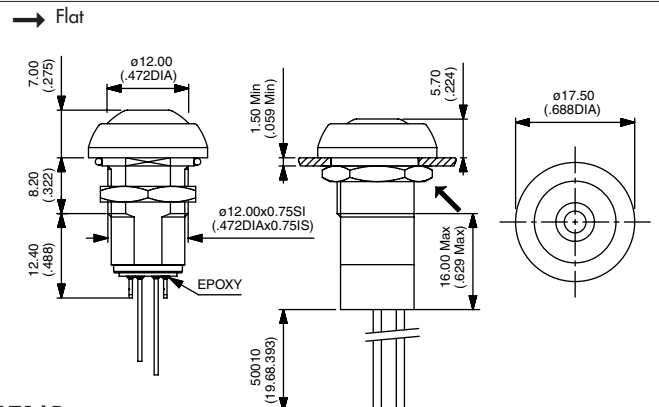


Solder lug terminals  
**IPR1SAD**

OFF - ON

Wire lead terminals  
**IPR1FAD**

OFF - ON



Also available with straight PC : **IPR1PAD** or quick-connect terminals : **IPR1Z1AD**

## PLUNGER COLOUR

Wire colours : black : contact, red : LED anode(+), blue : LED cathode(-)



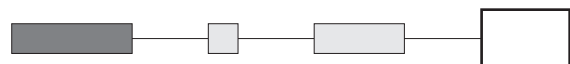
1 : blue - 1/4 : dark blue - 2 : black - 3 : green - 5 : yellow - 6 : red - 7/1 : white - 8 : bright chrome - 9 : orange

## LED COLOUR



LOS : red - LOY : yellow - LOG : green - LOB : blue

## OPTIONS



100 : Satin chrome bezel  
101 : Bright chrome bezel

# IP series

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Square or round - non-illuminated

## MODEL STRUCTURE



### Square models

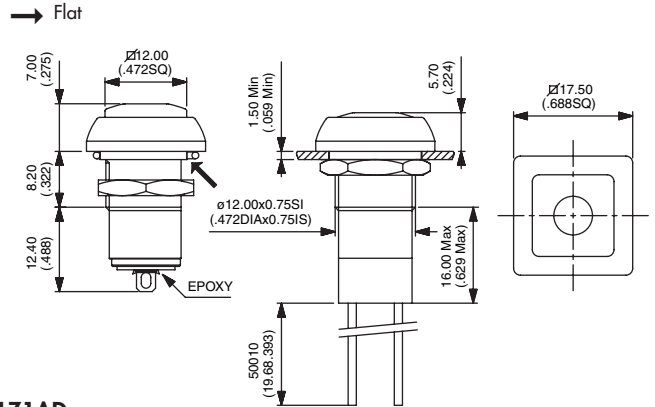


Solder lug terminals  
**IPC1SAD**

OFF - ON

Wire lead terminals  
**IPC1FAD**

OFF - ON



Also available with straight PC : **IPC1PAD** or quick-connect terminals : **IPC1Z1AD**

### Round models



CURVED ACTUATOR  
Solder lug terminals  
**IPR1SAD**

OFF - ON

Wire lead terminals  
**IPR1FAD**

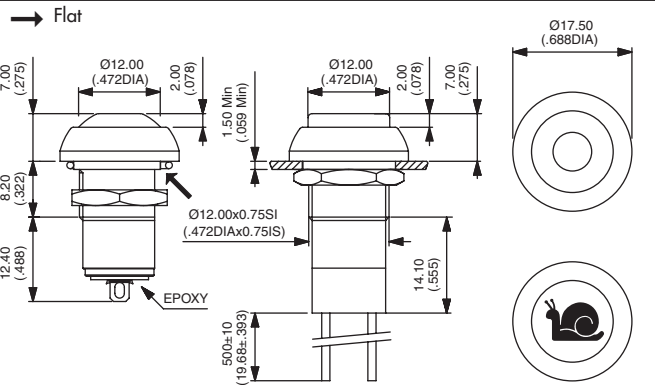
OFF - ON

FLAT ACTUATOR  
Solder lug terminals  
**IPP1SAD**

OFF - ON

Wire lead terminals  
**IPP1FAD**

OFF - ON

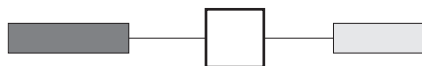


Also available with straight PC : **IP•1PAD** or quick-connect terminals : **IP•1Z1AD**

## PLUNGER COLOUR

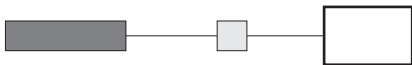


Plunger marking available on IPP models (symbol 10 mm max.). On request.

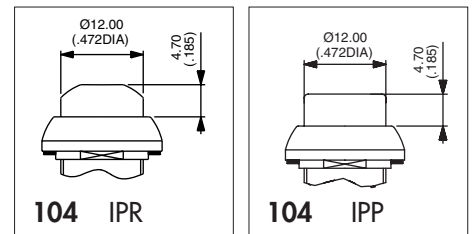


1 : blue - 1/4 : dark blue - 2 : black - 3 : green - 5 : yellow - 6 : red - 7/1 : white - 8 : bright chrome - 9 : orange

## OPTIONS



100 : Satin chrome bezel  
101 : Bright chrome bezel  
104 : High plunger (for round model only)

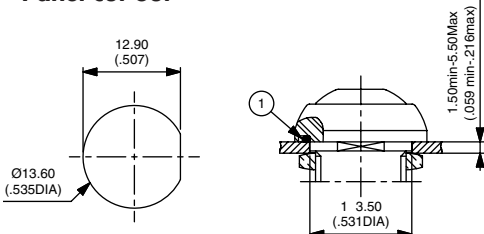


104 IPR

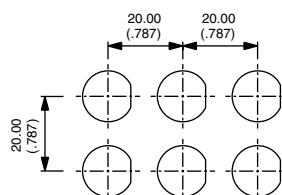
104 IPP

## MOUNTING

### Panel cut-out



### Matrix mounting



### Back of panel space requirement

