

# IP series

## Pushbutton switches for harsh environments - bushing Ø 12 mm - latching

*Distinctive features and specifications*

**UG1212-A-R1**



- Latching action**  
Actuator remains in the low position when "ON".
- Illuminated or non-illuminated**
- Compact**  
Behind-panel depth less than 20 mm (.787)
- Flat round actuator for optional marking**
- Sealed to IP67**

### ENVIRONMENTAL SPECIFICATIONS

- Front panel sealing : IP67 according to IEC 60529
- 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

### GENERAL SPECIFICATIONS

- Panel thickness : 1,5 mm (.059) min. 5,5 mm (.217) max.
- Total travel : 2,5 mm (.098) +/- 0,3 mm
- Typical operating force : 5 N +/- 2N
- Low level/mech. life : 200.000 cycles
- Torque : 1,5 Nm max. applied to nut
- Soldering : 320°C max. for 3 sec.

### ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load :  
4A 12VDC, 200.000 cycles  
1A 48VDC, 200.000 cycles  
2A 48VDC, 100.000 cycles  
3A 48VDC, 75.000 cycles  
1A 72VDC, 15.000 cycles
- Initial contact resistance : 100 mΩ max.
- Insulation resistance : 1 GΩ min. at 500VDC
- Dielectric strength : 1.500 Vrms between terminals  
1.000 VAC rms between terminals and frame

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	1,95V	1,95V
Yellow (LOY)	20mA	2V	2,05V
Green (LOG)	20mA	2,1V	2,5V
Blue (LOB)	20mA	3,2V	4V

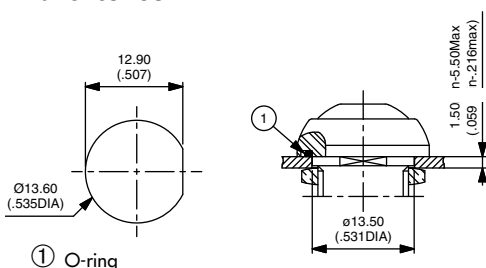
A resistor must be series-connected by the user.  
Resistor value =  $\frac{\text{supply voltage} - \text{LED forward voltage}}{\text{LED forward current}}$

### MATERIALS

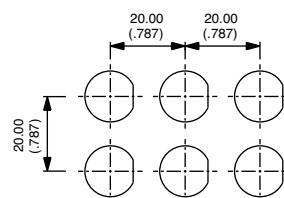
- Case : thermoplastic, UL 94-V0
- Actuator : polyamide 6/6
- Bushing/bezel : zinc die-cast (zamak), black painted
- Contacts : silver, gold plated
- Output wires (flying lead terminals) :  
F version : AWG20, section 0,6 mm<sup>2</sup>  
W version : AWG24, section 0,23 mm<sup>2</sup>
- LED wires :  
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

### MOUNTING

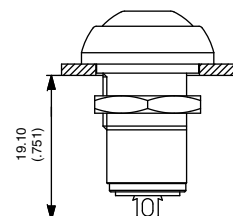
#### Panel cut-out



#### Matrix mounting



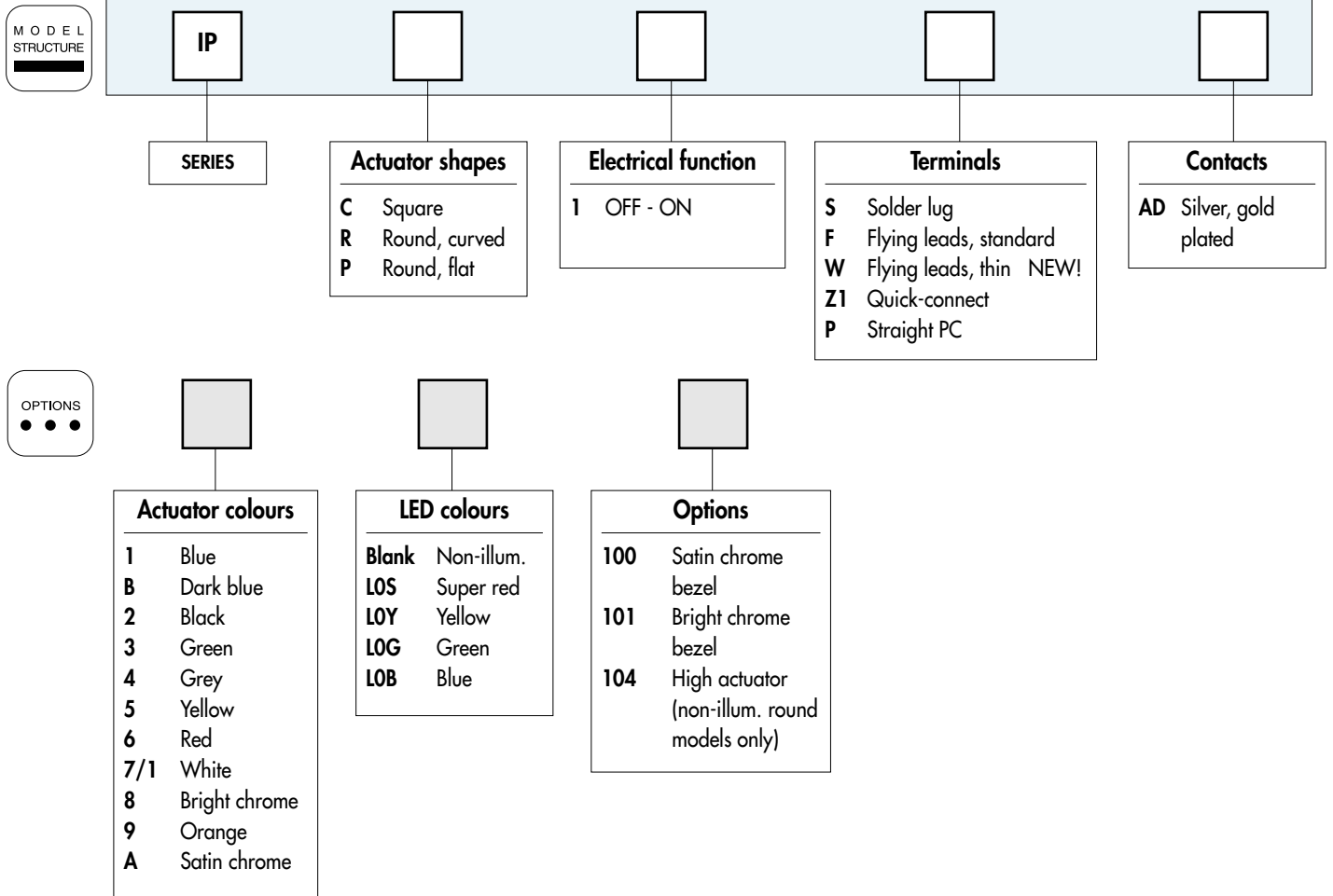
#### Back of panel space requirement



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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 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 (P/N U5125).  
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.

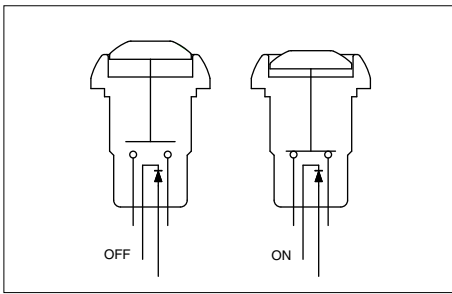


**Packaging unit** : 25 pieces

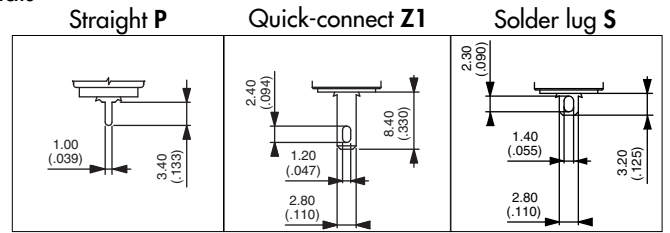
# IP series

Pushbutton switches for harsh environments - bushing  $\varnothing$  12 mm - latching

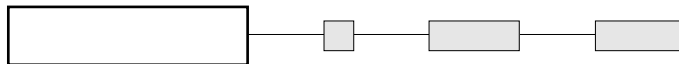
Square or round - illuminated



- Four LED colours
- Tin plated LED terminals



## MODEL STRUCTURE

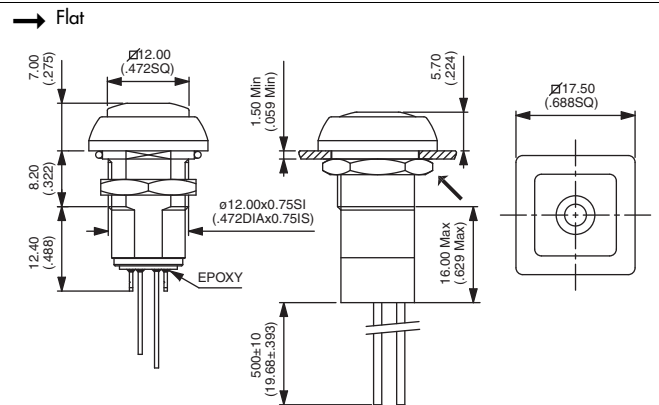


Shown with standard flying lead terminals.

## Square models



- Solder lug terminals  
**IPC1SAD**      OFF - ON
- Flying lead terminals  
**IPC1FAD**      OFF - ON
- For THIN flying leads, replace F with W.

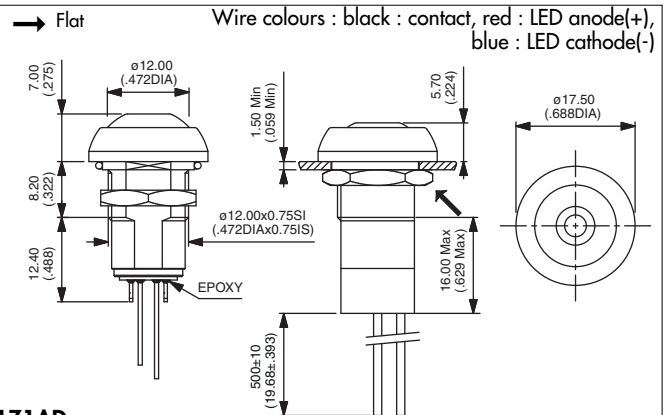


Also available with straight PC : **IPC1PAD** or quick-connect terminals : **IPC1Z1AD**

## Round models

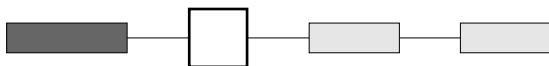


- Solder lug terminals  
**IPR1SAD**      OFF - ON
- Flying lead terminals  
**IPR1FAD**      OFF - ON
- For THIN flying leads, replace F with W.



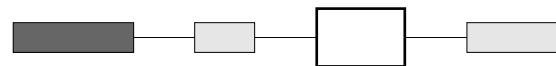
Also available with straight PC : **IPR1PAD** or quick-connect terminals : **IPR1Z1AD**

## ACTUATOR COLOURS



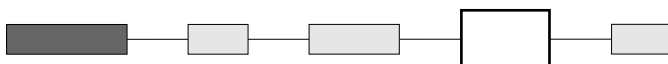
- 1 : blue - B : dark blue - 2 : black - 3 : green - 4 : grey  
5 : yellow - 6 : red - 7/1 : white - 8 : bright chrome  
9 : orange - A : satin chrome

## LED COLOURS



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

## OPTIONS



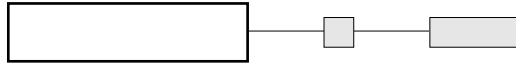
- 100 : Satin chrome bezel  
101 : Bright chrome bezel

# IP series

## Pushbutton switches for harsh environments - bushing Ø 12 mm - latching

Square or round - non-illuminated

### MODEL STRUCTURE



Shown with standard flying lead terminals.

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

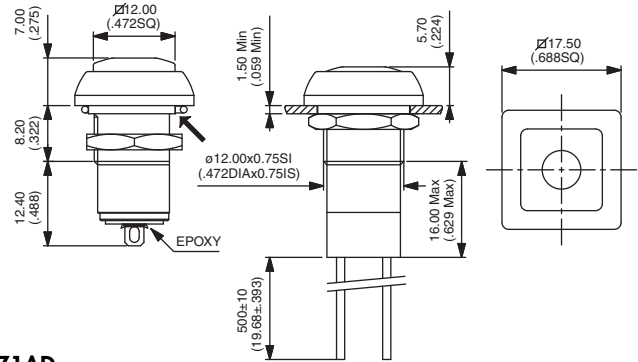
### Square models



Solder lug terminals	<b>IPC1SAD</b>	OFF - ON
Flying lead terminals	<b>IPC1FAD</b>	OFF - ON

For THIN flying leads, replace F with W.

→ Flat



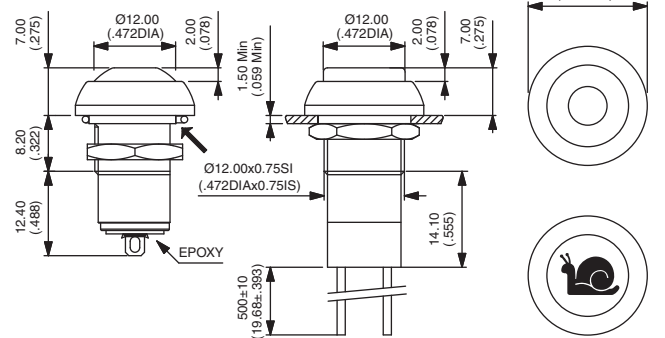
Also available with straight PC : **IPC1PAD** or quick-connect terminals : **IPC1Z1AD**

### Round models



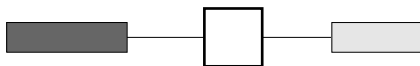
CURVED ACTUATOR		
Solder lug terminals	<b>IPR1SAD</b>	OFF - ON
Flying lead terminals	<b>IPR1FAD</b>	OFF - ON
FLAT ACTUATOR		
Solder lug terminals	<b>IPP1SAD</b>	OFF - ON
Flying lead terminals	<b>IPP1FAD</b>	OFF - ON

→ Flat



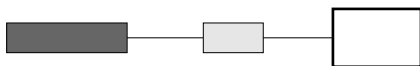
Also available with straight PC : **IP•1PAD** or quick-connect terminals : **IP•1Z1AD** For THIN flying leads, replace F with W.

### 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  
104 : High actuator (for round model only)

