

# IR series

**New!**

## Sealed pushbutton switches - bushing Ø 16 mm - momentary

*Distinctive features*

UG1006-A

The IR series is a range of sealed momentary pushbutton switches with dia. 16 mm bushing. This series is divided into 2 families : standard models and microswitch technology models.

### Common features

- Sealed to IP67
- Illuminated or non-illuminated
- Tactile feedback
- Square or round actuator
- Wide choice of bezel and actuator colours
- Wide choice of illumination colours

### Standard versions

- Numerous terminal options : solder, flying lead, straight PC, quick-connect, screw
- Screw versions withstanding up to 4A
- Electrical function : NO (2 terminals)



NO - Screw terminals



NO - Illuminated  
Wire lead terminals



NO - Solder lug  
terminals

### Microswitch versions

- Withstanding up to 5A
- Two electrical functions :  
NC+NO (3 terminals)  
NC/NO combined (4 terminals)



NC+NO - 3 terminals



NC/NO - 4 terminals - Illuminated

### Optional marking

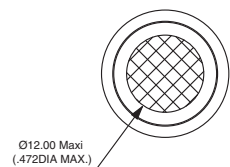
Actuator marking is available on request for models with flat round actuator.



Standard version

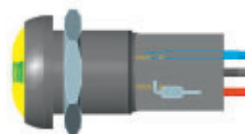


Microswitch version



### Integrated resistor

On wire lead illuminated versions, the LED resistor can be integrated in the product by APEM. On request.



# New!

# IR series

## Sealed pushbutton switches - bushing Ø 16 mm - momentary - standard version

*Distinctive features and specifications*



- Screw version up to 4A
- Tactile feedback
- Sealed to IP67
- Illuminated or non-illuminated
- Flat round actuator for optional marking

### 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
- Operating temperature : -40°C to +85°C

### GENERAL SPECIFICATIONS

- Panel thickness : 8 mm (.314) max.
- Total travel : 1,6 mm (.062) +/- 0,3 mm
- Typical operating force : 4N +/- 2N
- Mechanical life : 1.000.000 cycles
- Torque : 0,8 Nm max. applied to nut
- Soldering : 320°C max. for 3 sec.

### ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load :
  - Gold plated silver contacts (code 4) : 200mA 48VDC - 200mA 250VAC
  - Silver contacts (code 2) - screw terminals : 2A 250VAC - 4A 48VDC
- Electrical life at full load : 500.000 cycles
- Initial contact resistance : 100 mΩ max.
- Insulation resistance : 1 GΩ min. at 500VDC
- Dielectric strength : 1.500 Vrms

### 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 =  $\frac{\text{supply voltage} - \text{LED forward voltage}}{\text{LED forward current}}$

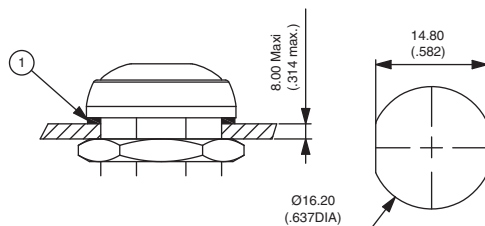
On flying lead versions, the LED resistor can be integrated by APEM on request.

### MATERIALS

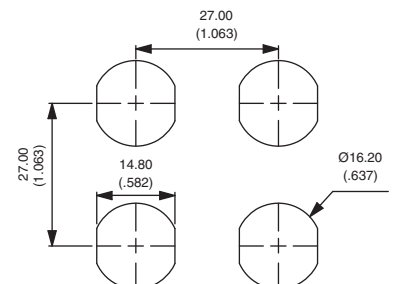
- Case : thermoplastic UL94-V0
- Actuator : polyamide 6/6
- Bushing/bezel : polyamide 6/6
- Contacts :
  - 4 : silver, gold plated
  - 2 : silver (screw terminals)
- Multi-wire lead AWG20, section 0,6 mm<sup>2</sup>
- LED wire : AWG26, section 0,12 mm<sup>2</sup>
- Lens : polycarbonate
- Terminal seal : epoxy

### PANEL CUT-OUT

① Flat seal



### MATRIX MOUNTING

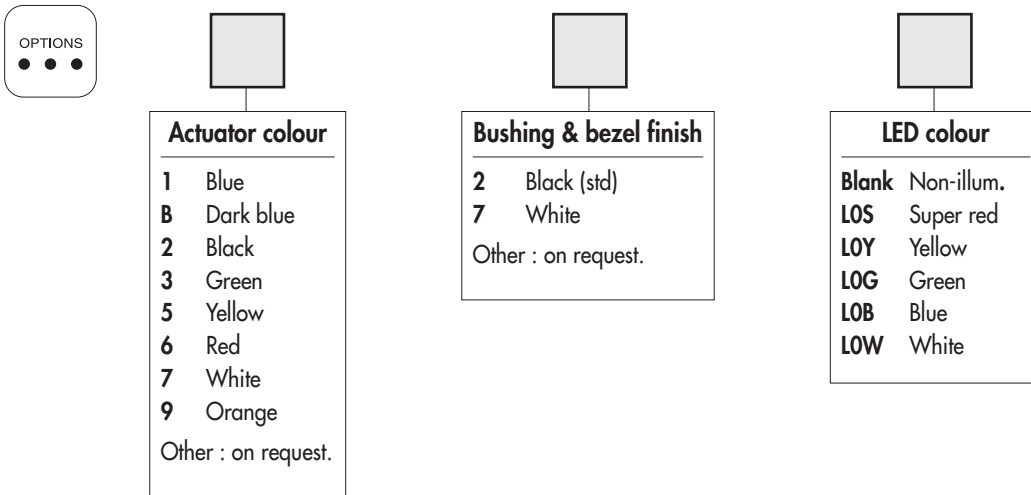
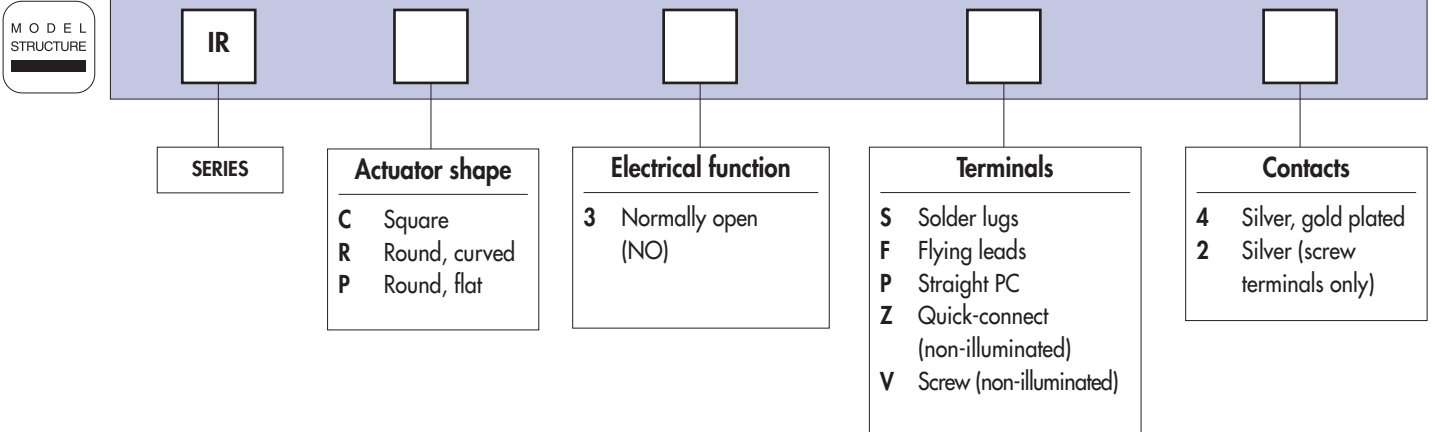


# IR series

**New!**

Sealed pushbutton switches - bushing Ø 16 mm - momentary - standard version

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



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



**Mounting accessories** : Standard hardware supplied : 1 hex nut 19 mm (.748) across flats and 1 flat seal  
 Hex nut P/N U4116.



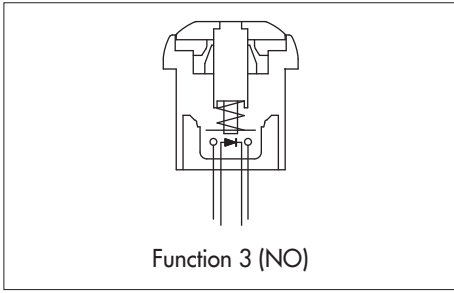
**Packaging unit** : 25 pieces for flying lead models - 40 pieces for other models

**New!**

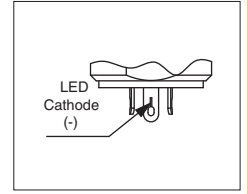
# IR series

Sealed pushbutton switches - bushing Ø 16 mm - momentary - standard version

Round - illuminated



- Five LED colours
- Tin plated LED terminals
- Gold plated contacts



**MODEL STRUCTURE**



Actuator marking available on IRP models (symbol 12 mm max.). On request.

**Solder lug terminals**

→ Flat



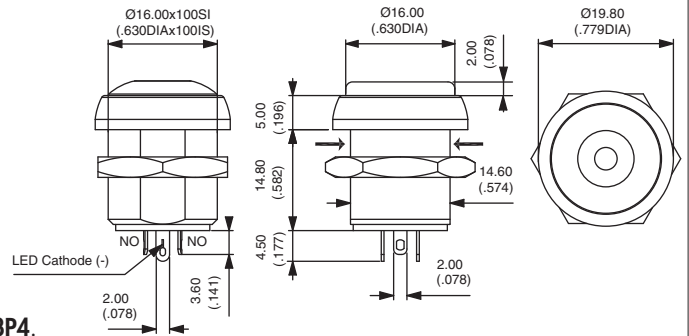
Curved actuator  
**IRR3S4**

Normally Open

Flat actuator  
**IRP3S4**

Normally Open

Also available with straight PC terminals : **IR•3P4**.  
LED colour is indicated by the bottom of the switch.



**Sealed flying lead terminals**

→ Flat



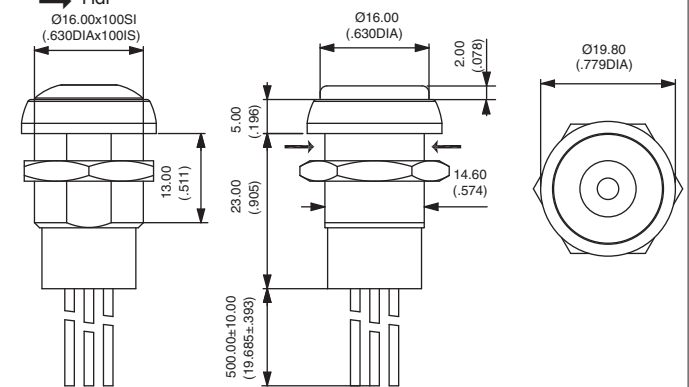
Curved actuator  
**IRR3F4**

Normally Open

Flat actuator  
**IRP3F4**

Normally Open

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

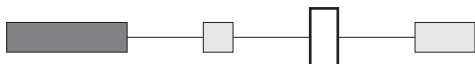


**ACTUATOR COLOUR**



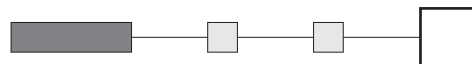
1 : blue - B : dark blue - 2 : black - 3 : green - 5 : yellow - 6 : red - 7 : white - 9 : orange

**BUSHING AND BEZEL FINISH**



2 : black (standard) - 7 : white

**LED COLOUR**



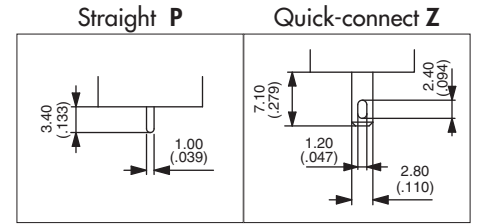
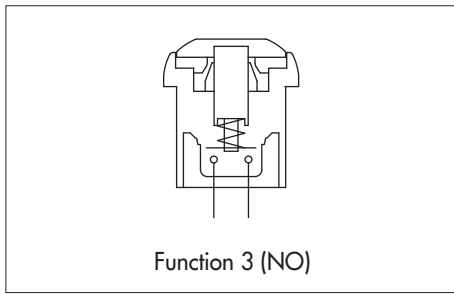
LOS : super red - LOY : yellow - LOG : green - LOB : blue  
LOW : white

# IR series

**New!**

Sealed pushbutton switches - bushing Ø 16 mm - momentary - standard version

Round - non-illuminated



**MODEL STRUCTURE**



Actuator marking available on IRP models (symbol 12 mm max.). On request.

## Solder lug terminals - gold plated contacts



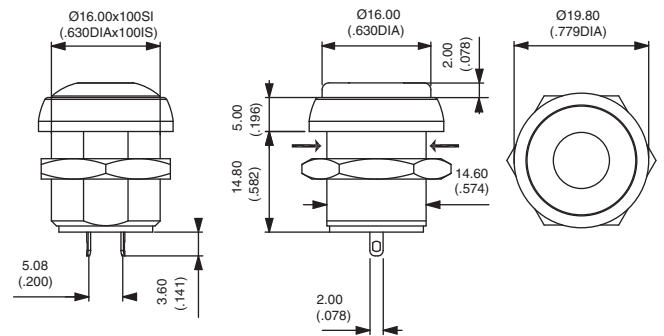
Curved actuator  
**IRR3S4**



Flat actuator  
**IRP3S4**



→ Flat



Also available with straight PC terminals :  
**IR•3P4** and quick-connect terminals : **IR•3Z4**.

## Sealed flying lead terminals - gold plated contacts



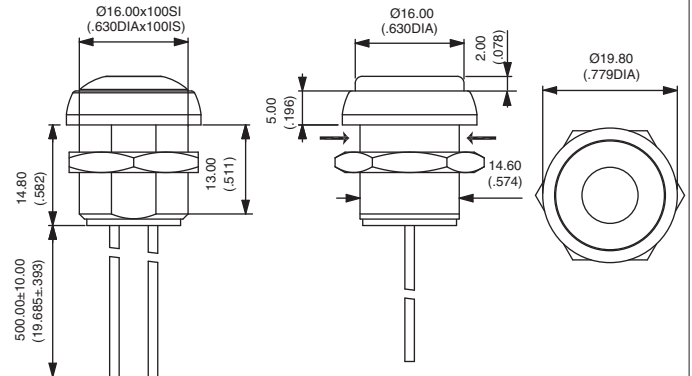
Curved actuator  
**IRR3F4**



Flat actuator  
**IRP3F4**



→ Flat



## Screw terminals - silver contacts



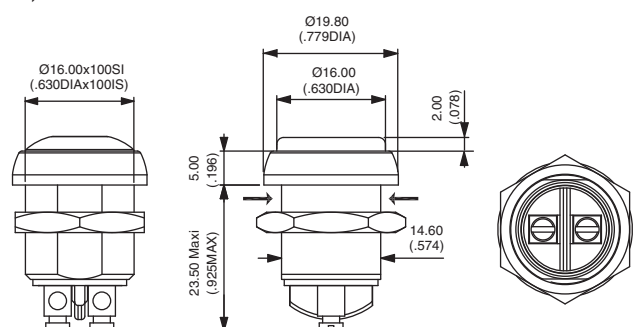
Curved actuator  
**IRR3V2**



Flat actuator  
**IRP3V2**



→ Flat



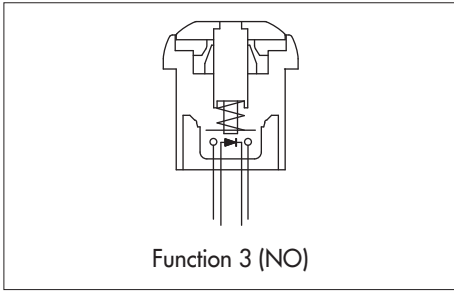
Actuator colour and bushing/bezel finish : select the desired codes on previous page.

**New!**

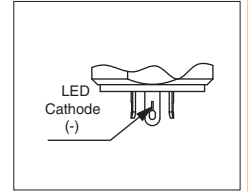
# IR series

Sealed pushbutton switches - bushing  $\varnothing$  16 mm - momentary - standard version

Square - illuminated



- Five LED colours
- Tin plated LED terminals
- Gold plated contacts



**MODEL STRUCTURE**



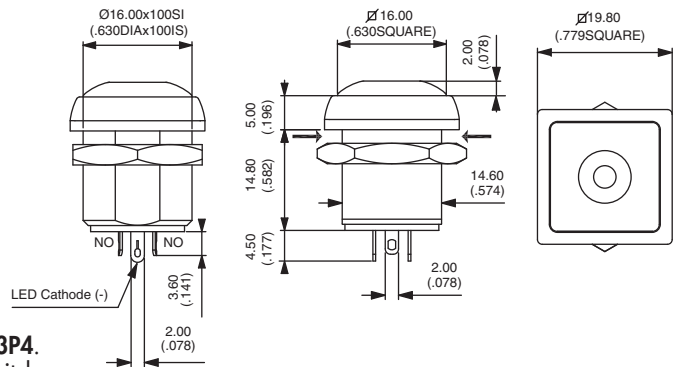
## Solder lug terminals



IRC3S4



→ Flat



Also available with straight PC terminals : **IRC3P4**.  
LED colour is indicated by the bottom of the switch.

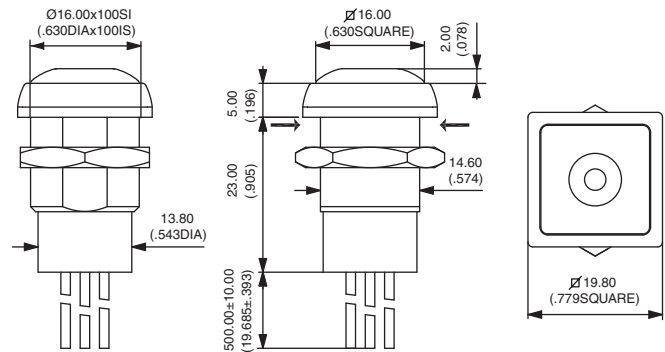
## Sealed flying lead terminals



IRC3F4



→ Flat



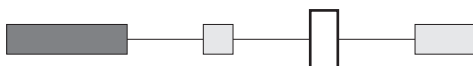
Wire colours : black : NO contact,  
red : LED anode (+), blue : LED cathode (-)

## ACTUATOR COLOUR



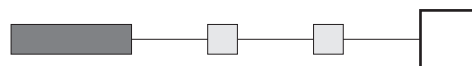
1 : blue - B : dark blue - 2 : black - 3 : green - 5 : yellow - 6 : red - 7 : white - 9 : orange

## BUSHING AND BEZEL FINISH



2 : black (standard) - 7 : white

## LED COLOUR



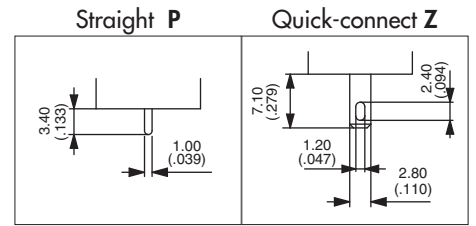
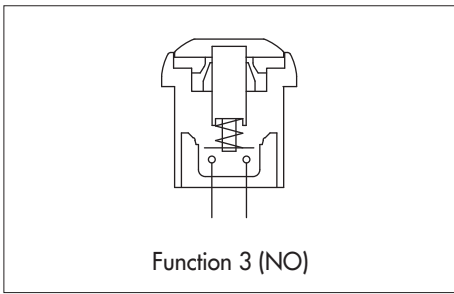
LOS : super red - LOY : yellow - LOG : green - LOB : blue  
LOW : white

# IR series

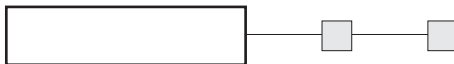
**New!**

Sealed pushbutton switches - bushing Ø 16 mm - momentary - standard version

Square - non-illuminated



MODEL STRUCTURE



## Solder lug terminals - gold plated contacts

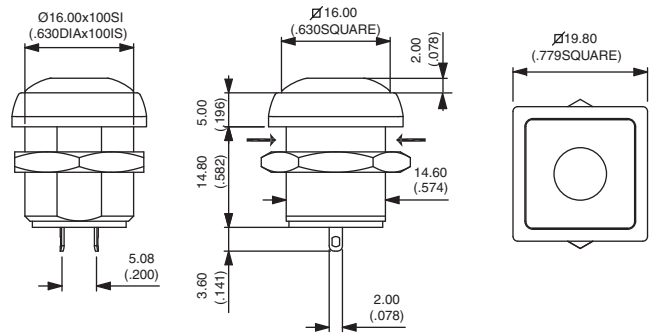


IRC3S4



Normally Open

→ Flat



Also available with straight PC terminals : IRC3P4 or quick-connect terminals : IRC3Z4.

## Sealed flying lead terminals - gold plated contacts

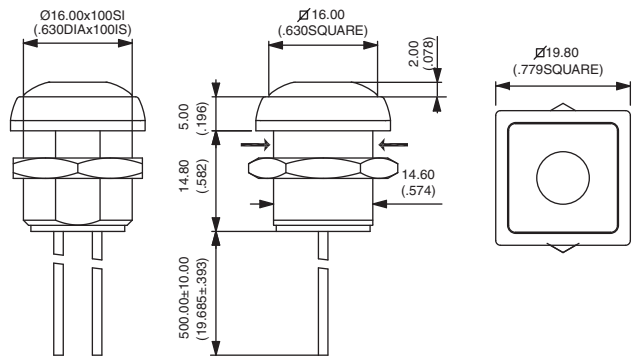


IRC3F4



Normally Open

→ Flat



## Screw terminals - silver contacts

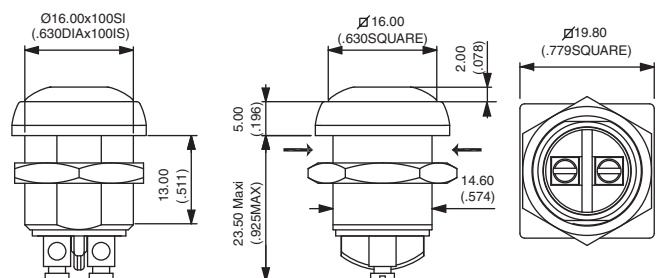


IRC3V2



Normally Open

→ Flat



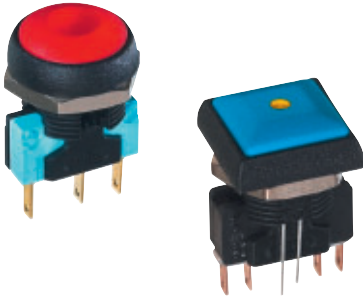
Actuator colour and bushing/bezel finish : select the desired codes on previous page.

**New!**

**IR series**

Sealed pushbutton switches - bushing Ø 16 mm - momentary - microswitch version

*Distinctive features and specifications*



- Microswitch technology up to 5A
- Tactile feedback
- Sealed to IP67
- Illuminated or non-illuminated
- Flat round actuator for optional marking

**ENVIRONMENTAL SPECIFICATIONS**

- Front panel sealing : IP67 according to IEC 60529
- Salt spray : IEC 512-6, test 11f
- Operating temperature : -20°C to +85°C

**ELECTRICAL SPECIFICATIONS**

- Max. current/voltage rating with resistive load :  
5A 250VAC, 50.000 cycles (function 7)  
5A 250VAC, 25.000 cycles (function 8)
- Initial contact resistance : 100 mΩ max.
- Insulation resistance : 1 GΩ min. at 500VDC
- Dielectric strength : 750 Vrms between terminals  
2.000 Vrms between terminals and frame

**LED COMPONENT SPECIFICATIONS**

LED colour	Forward current	Typ. forward voltage	Max. forward voltage
Super red (LOS)	20mA	2V	2,5V
Yellow (LOY)	20mA	2V	2,5V
Green (LOG)	10mA	2V	2,5V
Blue (LOB)	10mA	3,3V	3,8V

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**

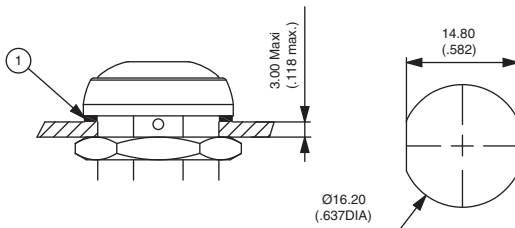
- Panel thickness : 3 mm (.118) max.
- Total travel : 1,6 mm (.062) +/- 0,3 mm
- Typical operating force : 4N +/- 2N
- Mechanical life : 1.000.000 cycles
- Torque : 0,8 Nm max. applied to nut
- Soldering : 320°C max. for 3 sec.

**MATERIALS**

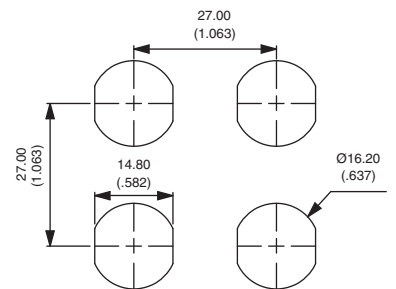
- Case : thermoplastic UL94-V0
- Actuator : polyamide 6/6
- Bushing/bezel : polyamide 6/6
- Contacts : silver
- Lens : polycarbonate

**PANEL CUT-OUT**

① Flat seal



**MATRIX MOUNTING**



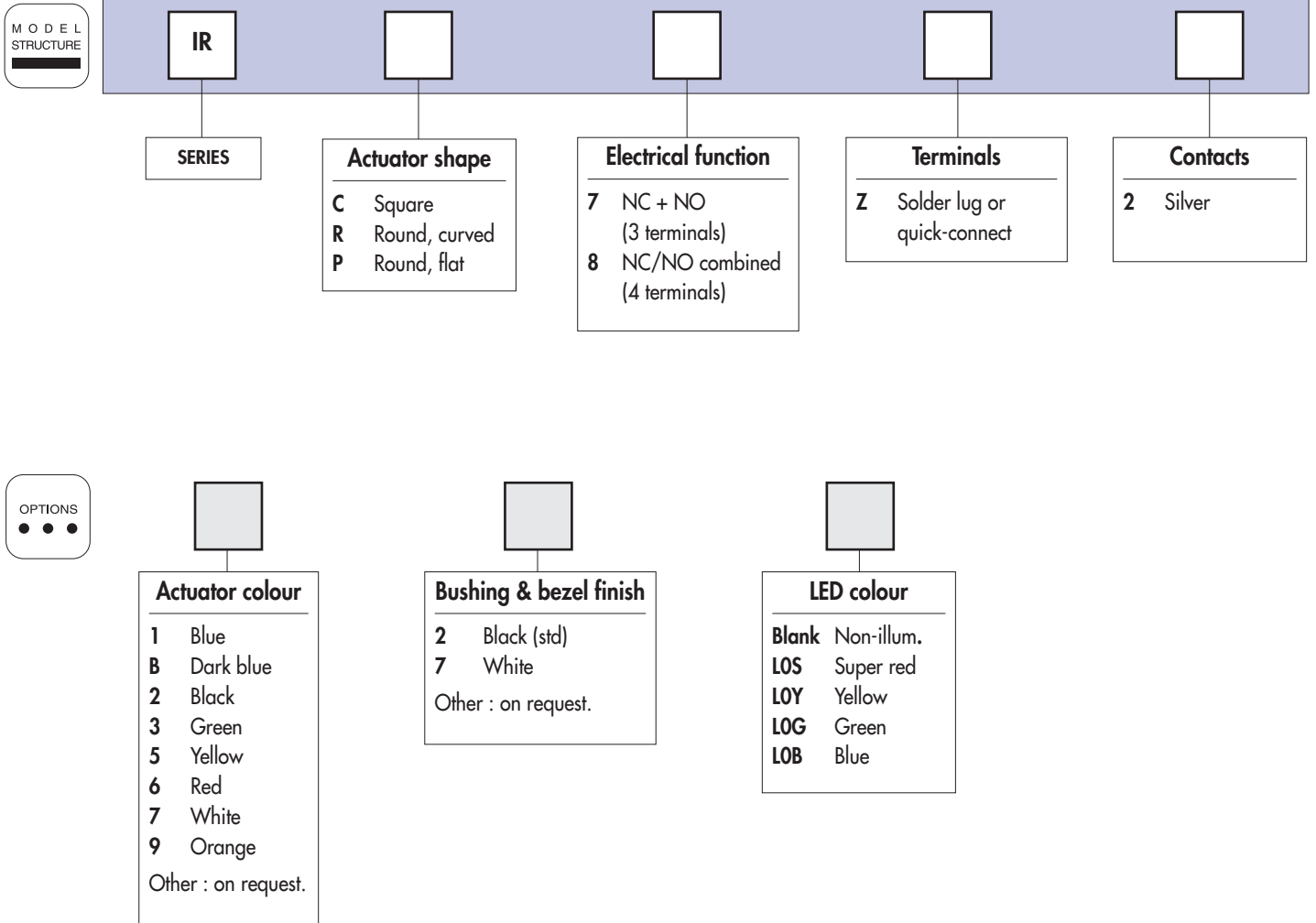


# IR series

**New!**

Sealed pushbutton switches - bushing Ø 16 mm - momentary - microswitch version

Overview



The IR series for high currents is based on a microswitch. Please note that this microswitch is supplied separately.

## 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



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



**Mounting accessories** : Standard hardware supplied : 1 hex nut 19 mm (.748) across flats and 1 flat seal. Hex nut P/N : U4116



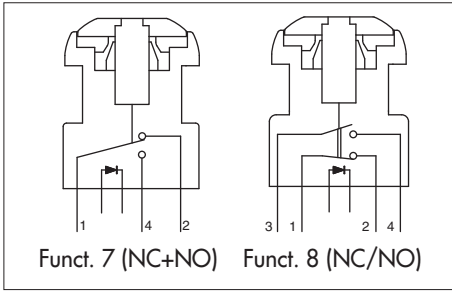
**Packaging unit** : 25 pieces for flying lead models - 40 pieces for other models

**New!**

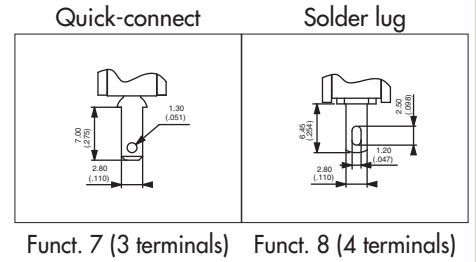
# IR series

Sealed pushbutton switches - bushing Ø 16 mm - momentary - microswitch version

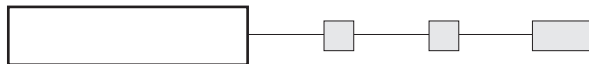
Round - illuminated



- Four LED colours
- Tin plated LED terminals
- Silver contacts



**MODEL STRUCTURE**

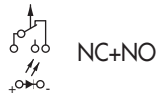


Actuator marking available on IRP models (symbol 12 mm max.). On request.

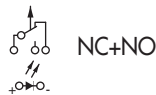
**Quick-connect terminals - NC+NO - 3 terminals**



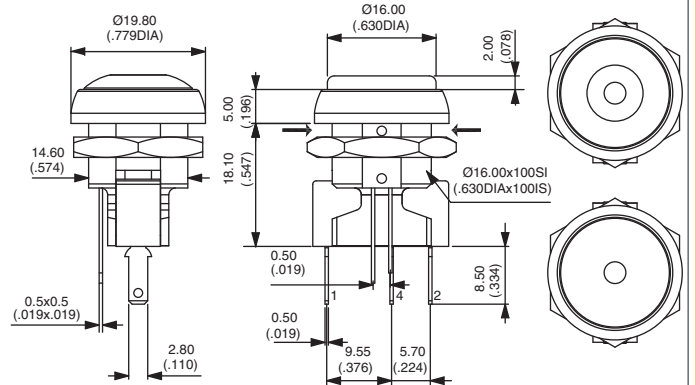
Curved actuator  
**IRR7Z2**



Flat actuator  
**IRP7Z2**



→ Flat



**Solder lug terminals - NC/NO - 4 terminals**



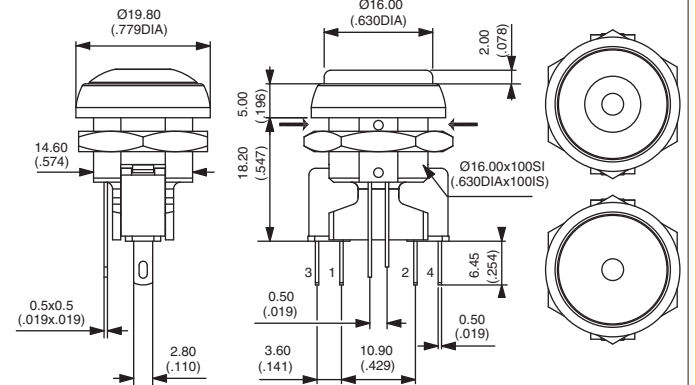
Curved actuator  
**IRR8Z2**



Flat actuator  
**IRP8Z2**



→ Flat



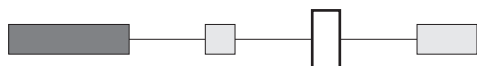
Terminals should be used as solder lugs only.

**ACTUATOR COLOUR**



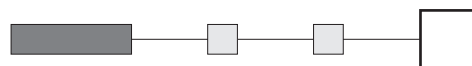
1 : blue - B : dark blue - 2 : black - 3 : green - 5 : yellow - 6 : red - 7 : white - 9 : orange

**BUSHING AND BEZEL FINISH**



2 : black (standard) - 7 : white

**LED COLOUR**



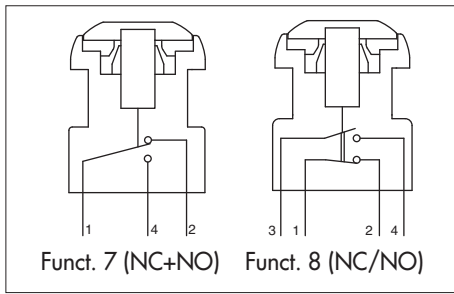
LOS : super red - LOY : yellow - LOG : green - LOB : blue

# IR series

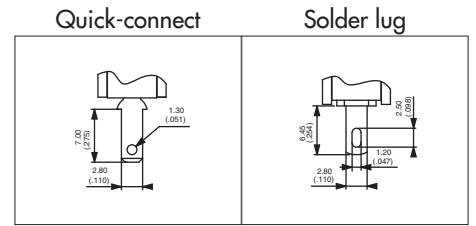
**New!**

Sealed pushbutton switches - bushing Ø 16 mm - momentary - microswitch version

Round - non-illuminated



• Silver contacts



**MODEL STRUCTURE**



Actuator marking available on IRP models (symbol 12 mm max.). On request.

B

## Quick-connect terminals - NC+NO - 3 terminals



Curved actuator  
**IRR7Z2**



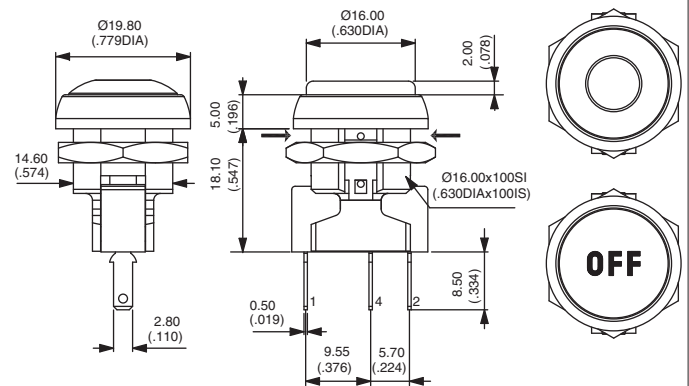
NC+NO

Flat actuator  
**IRP7Z2**



NC+NO

→ Flat



## Solder lug terminals - NC/NO - 4 terminals



Curved actuator  
**IRR8Z2**



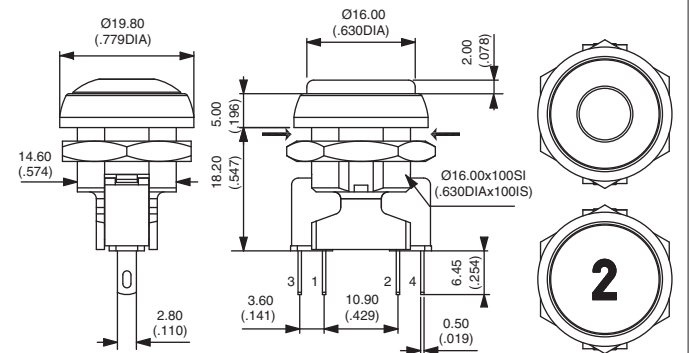
NC/NO combined

Flat actuator  
**IRP8Z2**



NC/NO combined

→ Flat



Terminals should be used as solder lugs only.

## ACTUATOR COLOUR



1 : blue - B : dark blue - 2 : black - 3 : green - 5 : yellow - 6 : red - 7 : white - 9 : orange

## BUSHING AND BEZEL FINISH



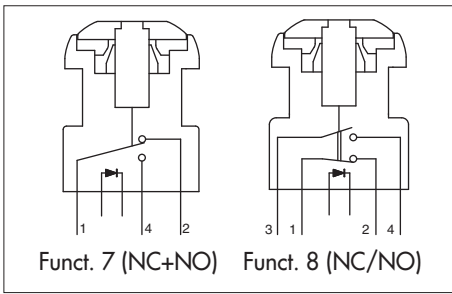
2 : black (standard) - 7 : white

**New!**

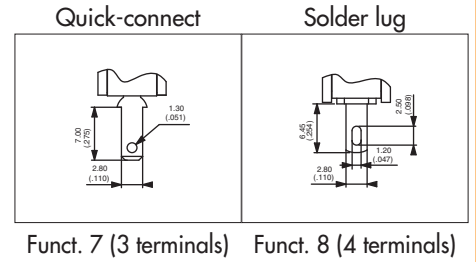
**IR series**

Sealed pushbutton switches - bushing Ø 16 mm - momentary - microswitch version

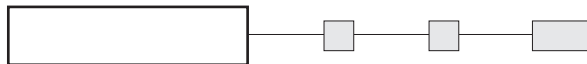
*Square - illuminated*



- Four LED colours
- Tin plated LED terminals
- Silver contacts



**MODEL STRUCTURE**



Funct. 7 (3 terminals)    Funct. 8 (4 terminals)

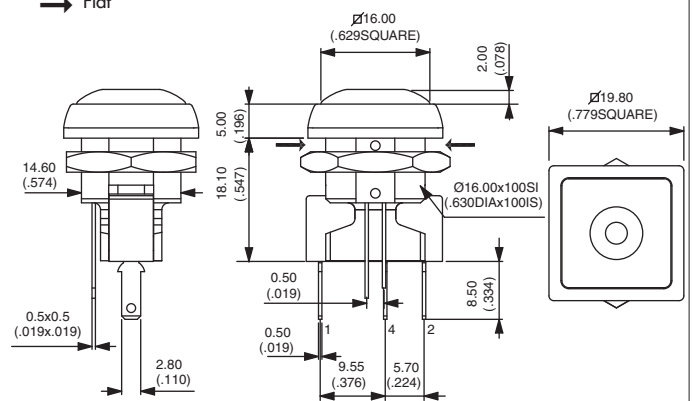
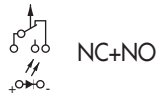
**B**

**Quick-connect terminals - NC+NO - 3 terminals**

→ Flat



IRC7Z2

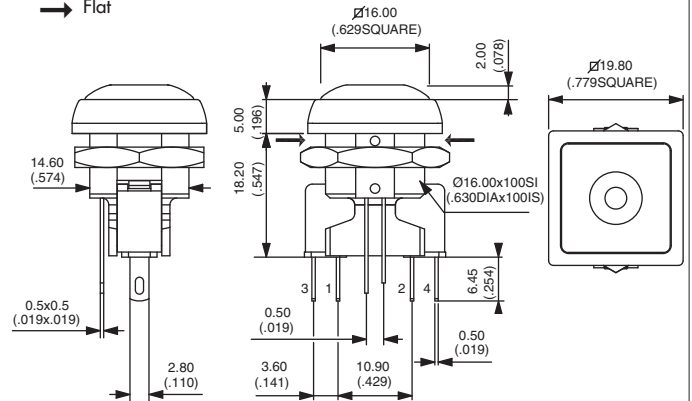


**Solder lug terminals - NC/NO - 4 terminals**

→ Flat



IRC8Z2



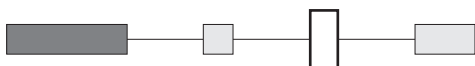
Terminals should be used as solder lugs only.

**ACTUATOR COLOUR**



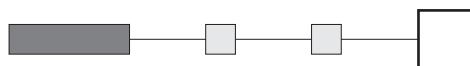
1 : blue - B : dark blue - 2 : black - 3 : green - 5 : yellow - 6 : red - 7 : white - 9 : orange

**BUSHING AND BEZEL FINISH**



2 : black (standard) - 7 : white

**LED COLOUR**



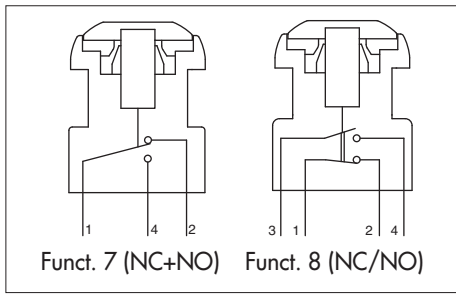
LOS : super red - LOY : yellow - LOG : green - LOB : blue

# IR series

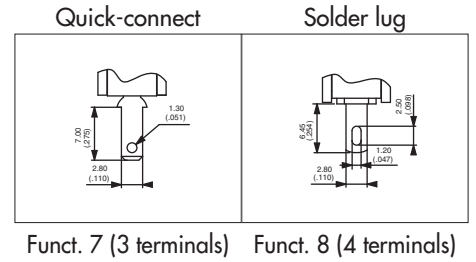
**New!**

Sealed pushbutton switches - bushing Ø 16 mm - momentary - microswitch version

Square - non-illuminated



• Silver contacts



MODEL  
STRUCTURE



B

## Quick-connect terminals - NC+NO - 3 terminals

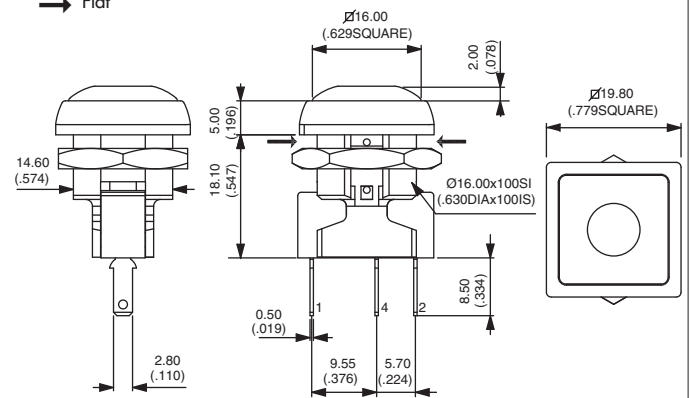


IRC7Z2



NC+NO

→ Flat



## Solder lug terminals - NC/NO - 4 terminals

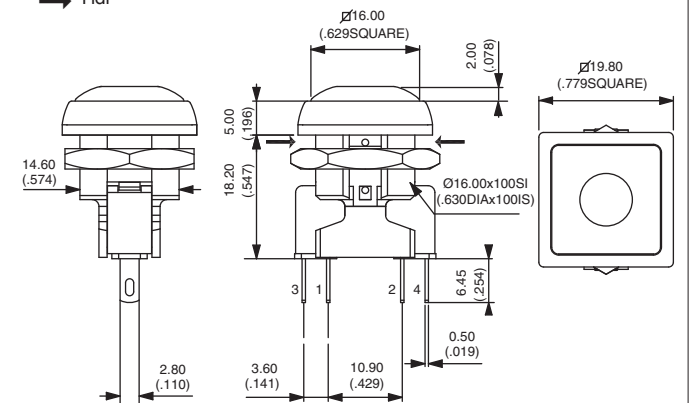


IRC8Z2



NC/NO combined

→ Flat



Terminals should be used as solder lugs only.

## ACTUATOR COLOUR



1 : blue - B : dark blue - 2 : black - 3 : green - 5 : yellow - 6 : red - 7 : white - 9 : orange

## BUSHING AND BEZEL FINISH



2 : black (standard) - 7 : white

# New!

# IR series

## Sealed pushbutton switches - bushing Ø 16 mm - latching

*Distinctive features and specifications*

UG1006-A



- Latching action models
- Sealed to IP67
- Illuminated or non-illuminated
- Flat round actuator for optional marking

### 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
- Operating temperature : -40°C to +85°C

### GENERAL SPECIFICATIONS

- Panel thickness : 8 mm (.314) max.
- Total travel : 2,5 mm (.098) +/- 0,3 mm
- Typical operating force : 5N +/- 2N
- Mechanical life : 200.000 cycles
- Torque : 0,8 Nm max. applied to nut
- Soldering : 320°C max. for 3 sec.

### ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load : 100mA 24VDC - 200.000 cycles
- Initial contact resistance : 100 mΩ max.
- Insulation resistance : 1 GΩ min. at 500VDC
- Dielectric strength : 1.500 Vrms between terminals

### MATERIALS

- Case : thermoplastic UL94-V0
- Plunger : polyamide
- Bushing/bezel : polyamide
- Contacts : silver, gold plated
- Multi-wire lead AWG20, section 0,6 mm<sup>2</sup>
- LED wire : AWG26, section 0,12 mm<sup>2</sup>
- Lens : polycarbonate
- Terminal seal : epoxy

### 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	3,2V	3,70V
Blue (LOB)	20mA	3,2V	4V

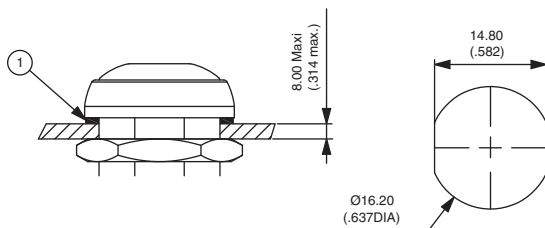
A resistor must be series-connected by the user.

$$\text{Resistor value} = \frac{\text{supply voltage} - \text{LED forward voltage}}{\text{LED forward current}}$$

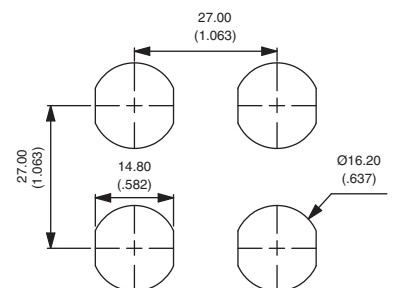
On flying lead versions, the LED resistor can be integrated by APEM on request.

### PANEL CUT-OUT

① Flat seal



### MATRIX MOUNTING



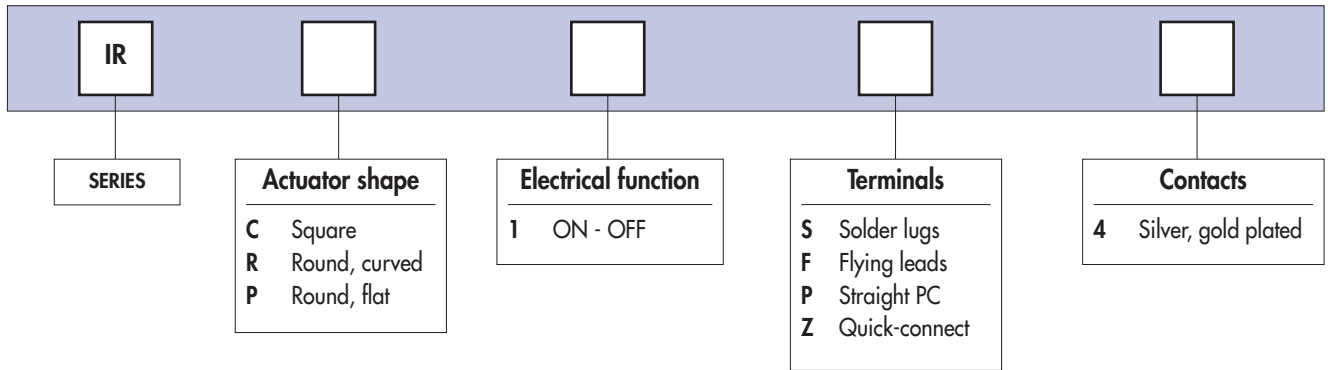
# IR series

New!

Sealed pushbutton switches - bushing Ø 16 mm - latching

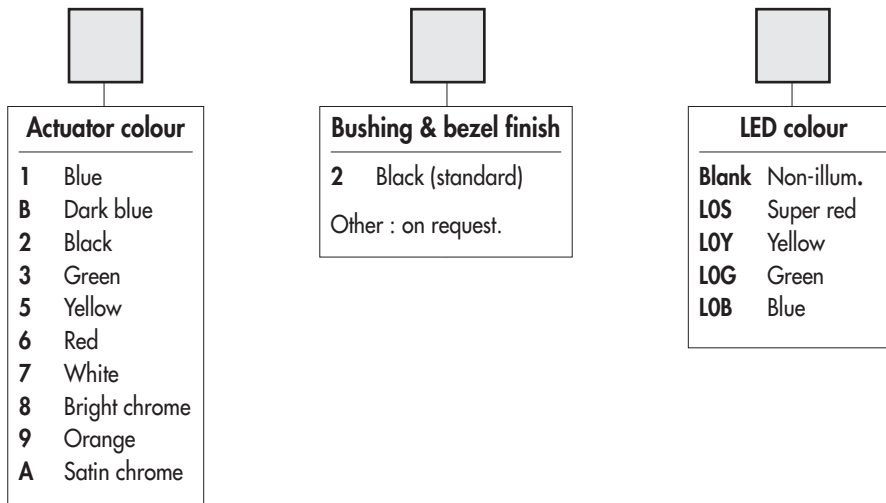
Overview

MODEL  
STRUCTURE



B

OPTIONS



## 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.



**Mounting accessories** : Standard hardware supplied : 1 hex nut 19 mm (.748) across flats and 1 flat seal  
Hex nut P/N U4116.



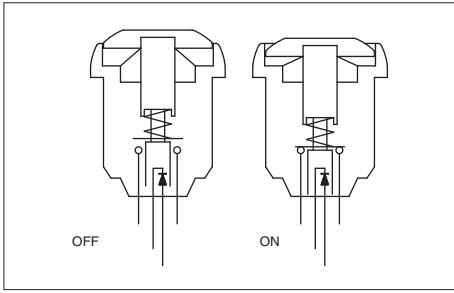
**Packaging unit** : 25 pieces for flying lead models - 40 pieces for other models

**New!**

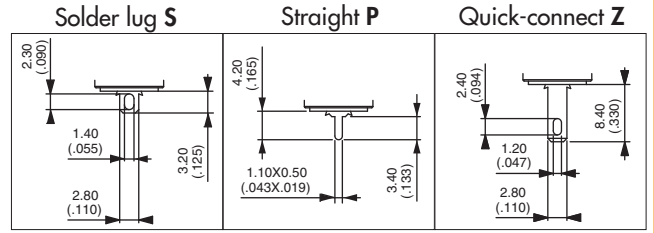
# IR series

Sealed pushbutton switches - bushing Ø 16 mm - latching

Round - illuminated



- Four LED colours
- Tin plated LED terminals
- Gold plated contacts



**MODEL STRUCTURE**



Plunger marking available on IRP models (symbol 12 mm max.). On request.

**Solder lug terminals**



Curved actuator  
**IRR1S4**

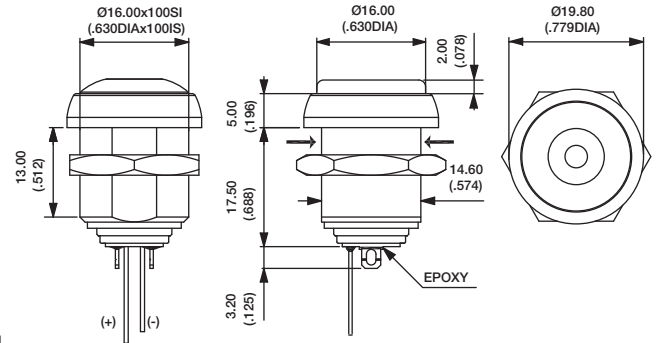
OFF - ON

Flat actuator  
**IRP1S4**

OFF - ON

Also available with straight PC terminals : **IR•1P4**  
& quick-connect terminals : **IR•1Z4**.

→ Flat



**Sealed flying lead terminals**



Curved actuator  
**IRR1F4**

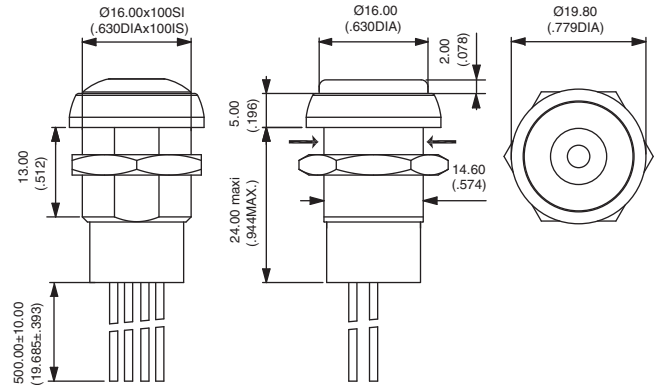
OFF - ON

Flat actuator  
**IRP1F4**

OFF - ON

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

→ Flat

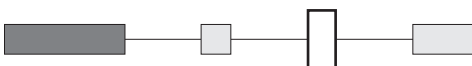


**ACTUATOR COLOUR**



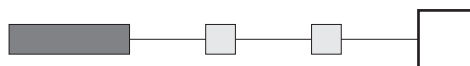
1 : blue - B : dark blue - 2 : black - 3 : green - 5 : yellow - 6 : red - 7 : white - 8 : bright chrome - 9 : orange  
A : satin chrome

**BUSHING AND BEZEL FINISH**



2 : black (standard)

**LED COLOUR**



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

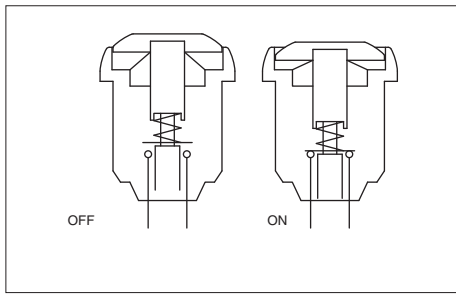


# IR series

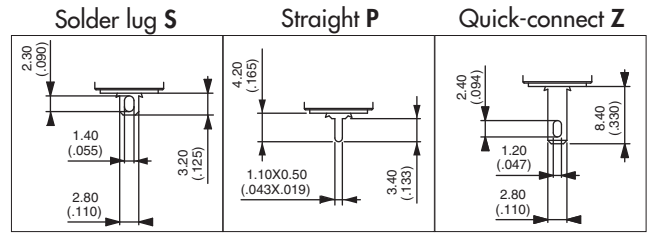
**New!**

Sealed pushbutton switches - bushing Ø 16 mm - latching

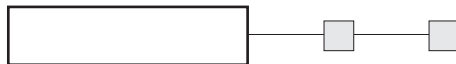
Round - non-illuminated



- Gold plated contacts



## MODEL STRUCTURE



Plunger marking available on IRP models (symbol 12 mm max.). On request.

## Solder lug terminals



Curved actuator  
**IRR1S4**

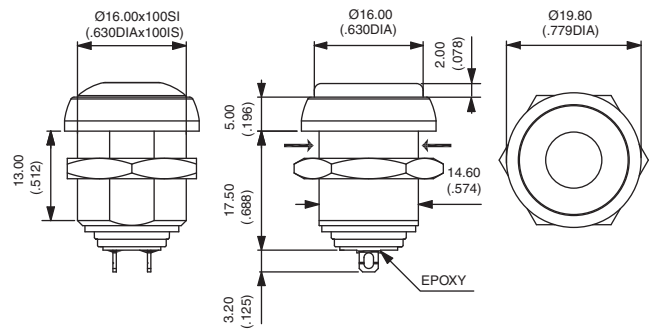
OFF - ON

Flat actuator  
**IRP1S4**

OFF - ON

Also available with straight PC terminals : **IR•1P4**  
& quick-connect terminals : **IR•1Z4**.

→ Flat



## Sealed flying lead terminals



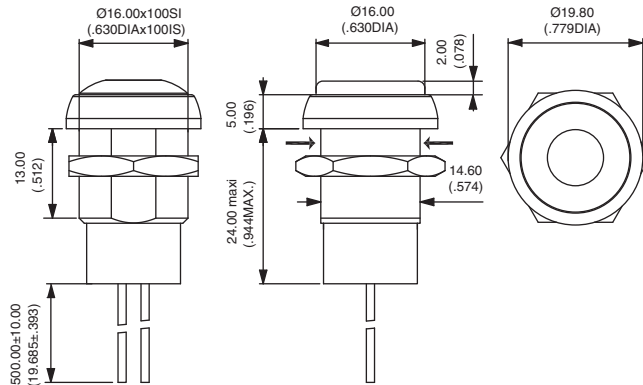
Curved actuator  
**IRR1F4**

OFF - ON

Flat actuator  
**IRP1F4**

OFF - ON

→ Flat



## ACTUATOR COLOUR



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

## BUSHING AND BEZEL FINISH



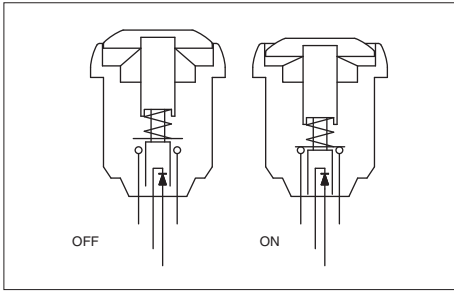
2 : black (standard)

**New!**

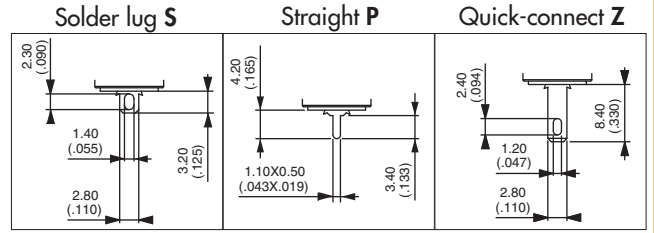
# IR series

Sealed pushbutton switches - bushing Ø 16 mm - latching

Square - illuminated



- Four LED colours
- Tin plated LED terminals
- Gold plated contacts



MODEL STRUCTURE



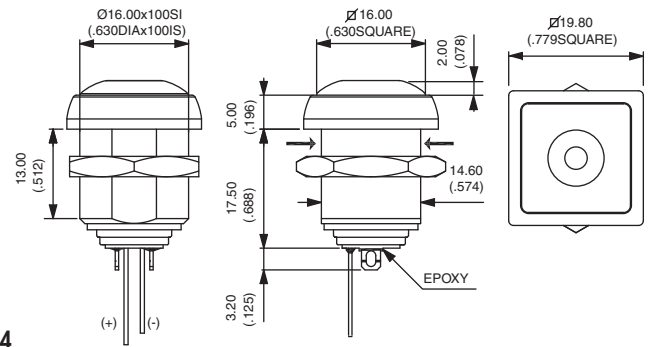
## Solder lug terminals



Curved actuator  
**IRC154**

OFF - ON

→ Flat



Also available with straight PC terminals : **IRC1P4**  
& quick-connect terminals : **IRC1Z4**.

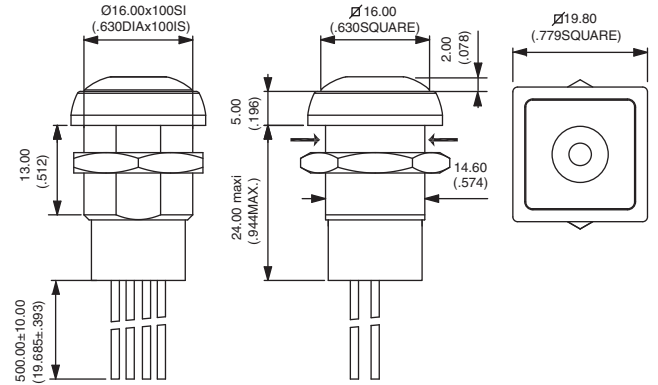
## Sealed flying lead terminals



Curved actuator  
**IRC1F4**

OFF - ON

→ Flat



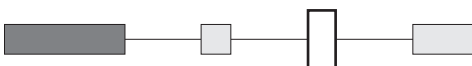
Wire colours : black : contact,  
red : LED anode(+), blue : LED cathode (-)

## ACTUATOR COLOUR



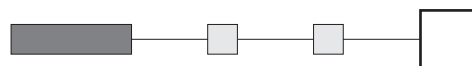
1 : blue - B : dark blue - 2 : black - 3 : green - 5 : yellow - 6 : red - 7 : white - 8 : bright chrome - 9 : orange  
A : satin chrome

## BUSHING AND BEZEL FINISH



2 : black (standard)

## LED COLOUR



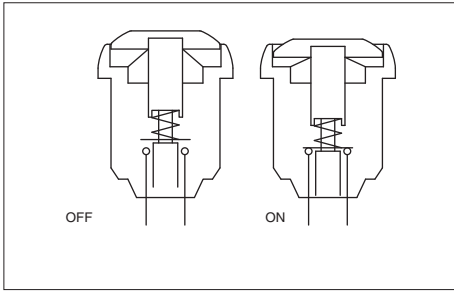
LOS : super red - LOY : yellow - LOG : green - LOB : blue

# IR series

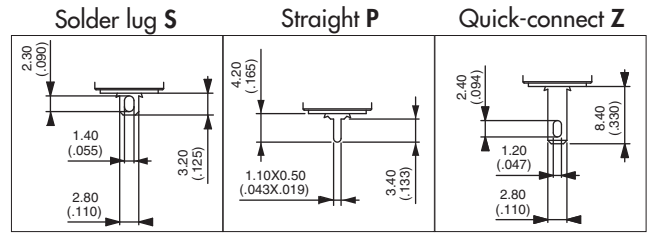
**New!**

Sealed pushbutton switches - bushing Ø 16 mm - latching

Square - non-illuminated



- Gold plated contacts



MODEL STRUCTURE



B

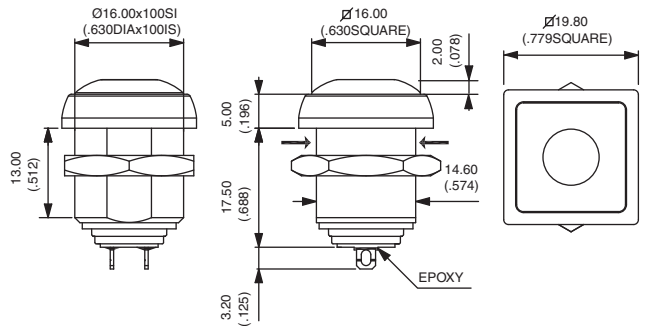
## Solder lug terminals



Curved actuator  
**IRC154**

OFF - ON

→ Flat



Also available with straight PC terminals : **IRC1P4**  
& quick-connect terminals : **IRC1Z4**.

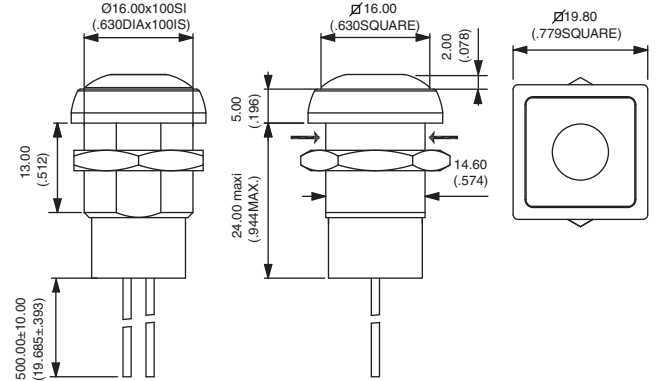
## Sealed flying lead terminals



Curved actuator  
**IRC1F4**

OFF - ON

→ Flat



## ACTUATOR COLOUR



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

## BUSHING AND BEZEL FINISH



2 : black (standard)