

# IQ series

Sealed pushbutton switches • bushing  $\varnothing$  16 mm •  
snap-in mounting • momentary



## DISTINCTIVE FEATURES

- Snap-in mounting for easy installation
- Momentary models
- Illuminated or non-illuminated
- Flat round actuator for optional marking
- Sealed to IP54



## ENVIRONMENTAL SPECIFICATIONS

- Front panel sealing : IP54 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 (-40 °F to +185 °F)



## ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load :
  - Gold plated contacts : Code 4 : 200 mA 48 VDC, 500,000 cycles
  - Code 7 : 5 A 28 VDC, 70,000 cycles
  - Silver contacts (code 2) - screw terminals : 4 A 48 VDC, 500,000 cycles
- Initial contact resistance : 100 m $\Omega$  max.
- Insulation resistance : 1 G $\Omega$  min. at 500 VDC
- Dielectric strength : 1,500 Vrms



### LED COMPONENT SPECIFICATIONS

| LED color          | Forward current | Typ. forward voltage       | Max. forward voltage |
|--------------------|-----------------|----------------------------|----------------------|
| Super red (LOS)    | 20 mA           | 2.1 V                      | 2.3 V                |
| Yellow (LOY)       | 20 mA           | 2.1 V                      | 2.3 V                |
| Green (LOG)        | 20 mA           | 2.1 V                      | 2.3 V                |
| Blue (LOB)         | 20 mA           | 3.2 V                      | 3.8 V                |
| White (LOW)        | 20 mA           | 3.35 V                     | 4.25 V               |
| Red/Green (LSG)    | 20 mA           | Red: 1.95 V / Green: 2.1 V | 2.5 V                |
| Yellow/green (LYG) | 20 mA           | Yellow: 2 V / green: 2.1 V | 2.5 V                |

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.

The company reserves the right to change specifications without notice.

# IQ series

Sealed pushbutton switches • bushing Ø 16 mm • snap-in mounting • momentary

## GENERAL SPECIFICATIONS

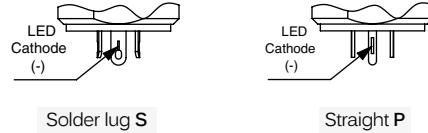
- Panel thickness :  
with flat seal : 2.20 mm (.088) max.  
without flat seal : 3 mm (.118) max.
- Total travel : 1.6 mm (.062) ± 0.3 mm
- Typical operating force : 4 N ± 2 N
- Low level or mechanical life : 1,000,000 cycles
- Soldering : 320 °C (608 °F) max. for 3 sec.

## MATERIALS

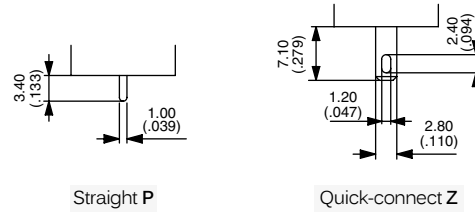
- Case : thermoplastic UL94-V0
- Actuator : polyamide 6/6
- Bushing/bezel : polyamide 6/6
- Contacts :  
4 and 7 : silver, gold plated  
2 : silver (screw terminals)
- Multi-wire leads AWG20, section 0.6 mm<sup>2</sup>
- LED wire : AWG26, section 0.12 mm<sup>2</sup>
- Lens : polycarbonate
- Terminal seal : epoxy

## TERMINALS

### ILLUMINATED MODELS

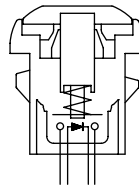


### NON-ILLUMINATED MODELS



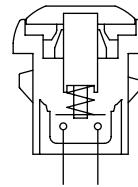
## ELECTRICAL FUNCTIONS

### ILLUMINATED MODELS



Function 3 (NO)

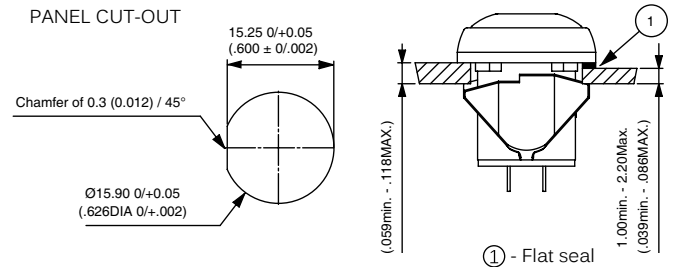
### NON-ILLUMINATED MODELS



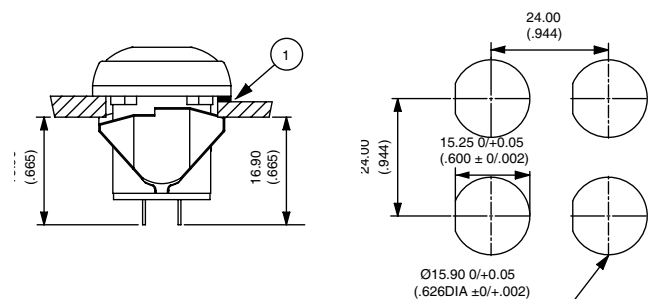
Function 3 (NO)

## MOUNTING

### PANEL CUT-OUT



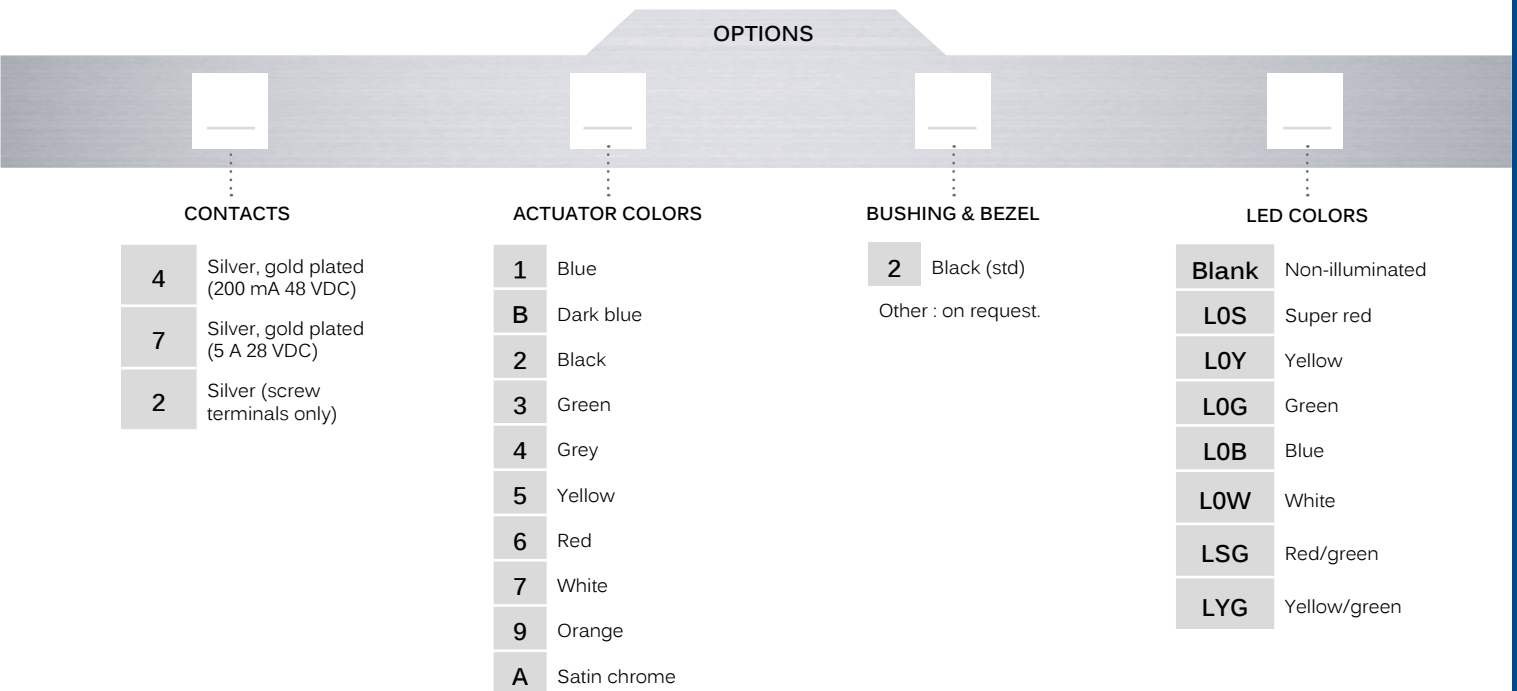
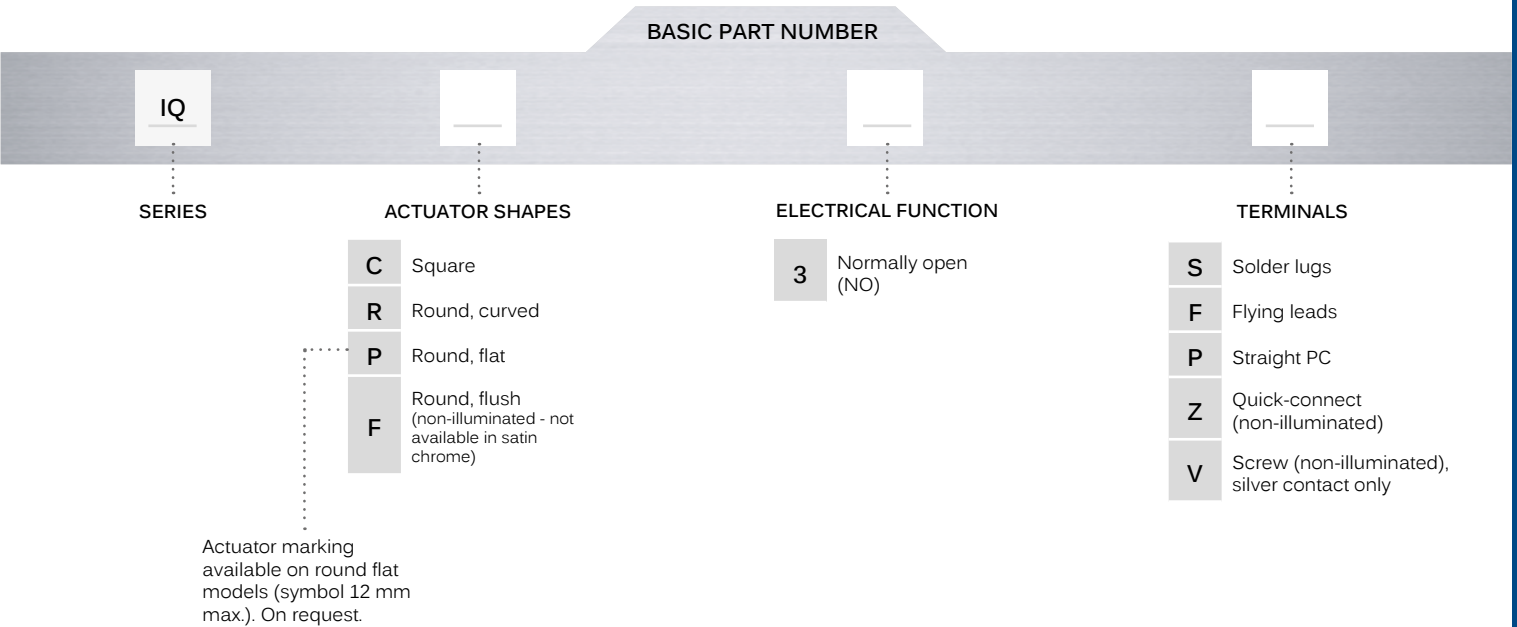
### BACK OF PANEL SPACE REQUIREMENT - MATRIX MOUNTING



Sealed pushbutton switches • bushing Ø 16 mm •  
snap-in mounting • momentary



## BUILD YOUR PART NUMBER



## ABOUT THIS SERIES

On the following pages, you will find successively basic part numbers 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.

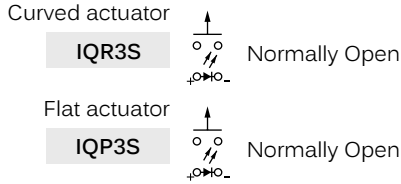


**Mounting accessories** : Standard hardware supplied : 1 flat seal

# IQ series

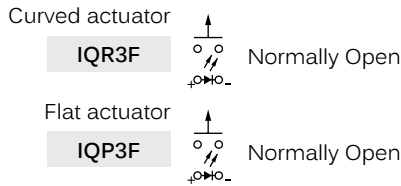
Sealed pushbutton switches • bushing Ø 16 mm • snap-in mounting • momentary

## ROUND - ILLUMINATED SOLDER LUG TERMINALS



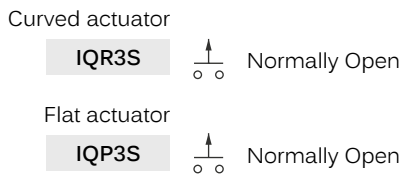
Also available with straight PC terminals : **IQ•3P4**.  
LED color is indicated by the bottom of the switch.

## ROUND - ILLUMINATED FLYING LEAD TERMINALS



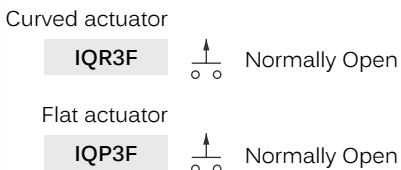
Wire colors : black : NO contact, red : LED anode (+), blue : LED cathode (-)

## ROUND - NON-ILLUMINATED SOLDER LUG TERMINALS

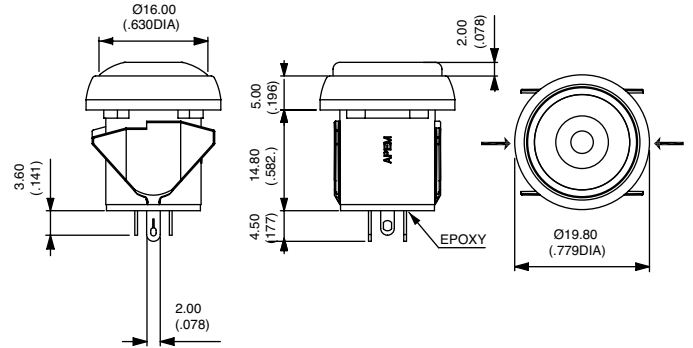


Also available with straight PC terminals : **IQ•3P4**  
and quick-connect terminals : **IQ•3Z4**.

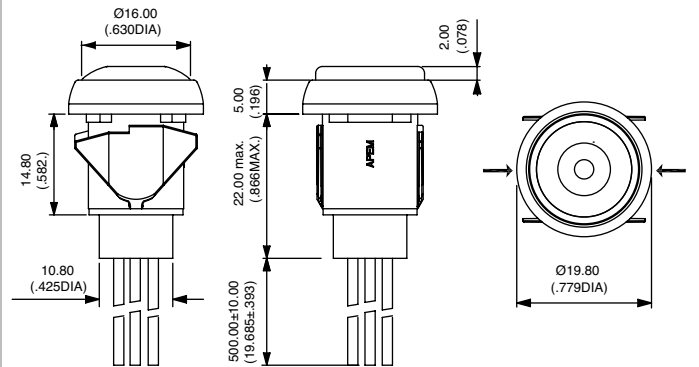
## ROUND - NON-ILLUMINATED FLYING LEAD TERMINALS



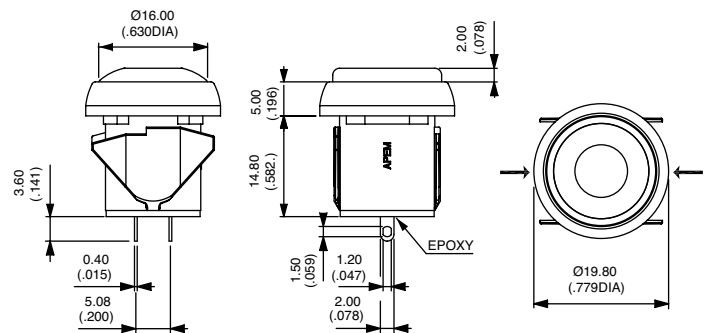
→ FLAT



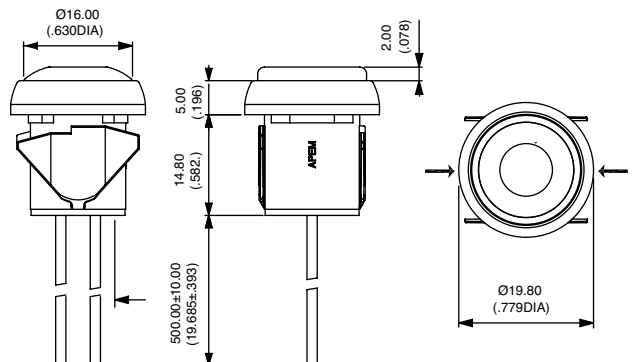
→ FLAT



→ FLAT



→ FLAT



Sealed pushbutton switches • bushing Ø 16 mm • snap-in mounting • momentary

## ROUND - NON-ILLUMINATED SCREW TERMINALS



Curved actuator

**IQR3V**



Normally Open

Flat actuator

**IQP3V**



Normally Open

## SQUARE - ILLUMINATED SOLDER LUG TERMINALS



**IQC3S**



Normally Open

Also available with straight PC terminals : **IQC3P**.  
LED color is indicated by the bottom of the switch.

## SQUARE - ILLUMINATED FLYING LEAD TERMINALS



**IQC3F**



Normally Open

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

## SQUARE - NON-ILLUMINATED SOLDER LUG TERMINALS



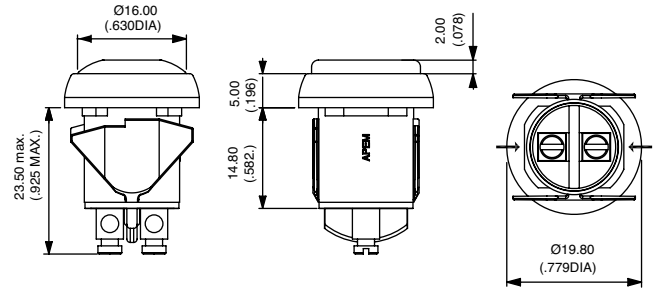
**IQC3S**



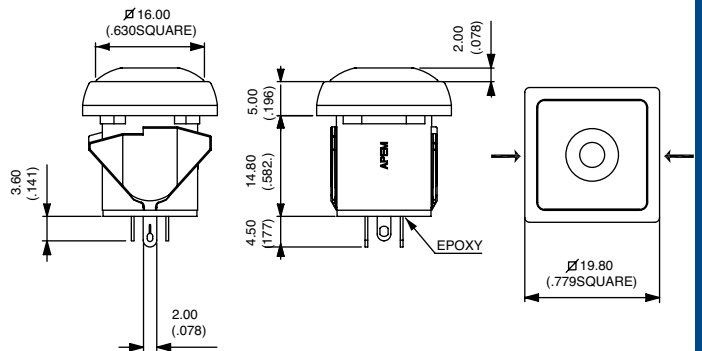
Normally Open

Also available with straight PC terminals : **IQC3P**  
or quick-connect terminals : **IQC3Z**.

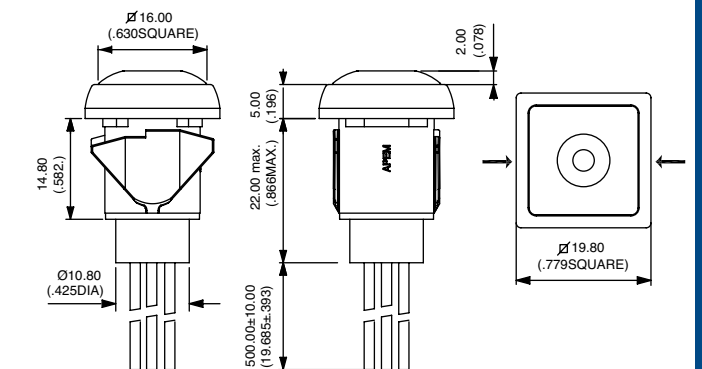
→ FLAT



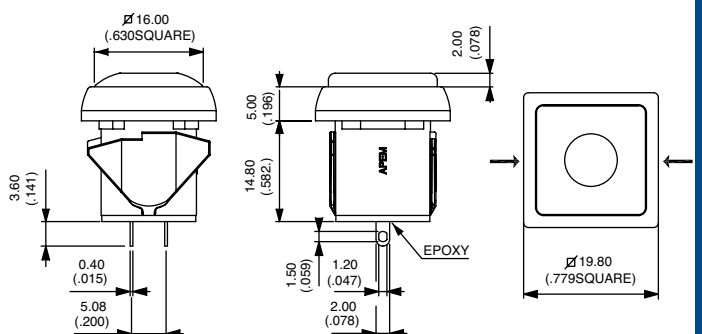
→ FLAT



→ FLAT



→ FLAT




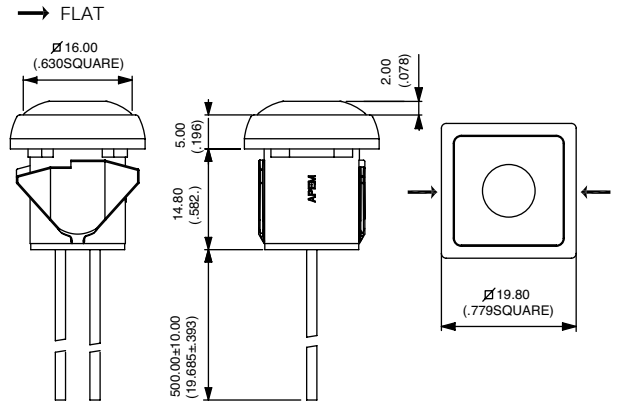
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## SQUARE - NON-ILLUMINATED FLYING LEAD TERMINALS




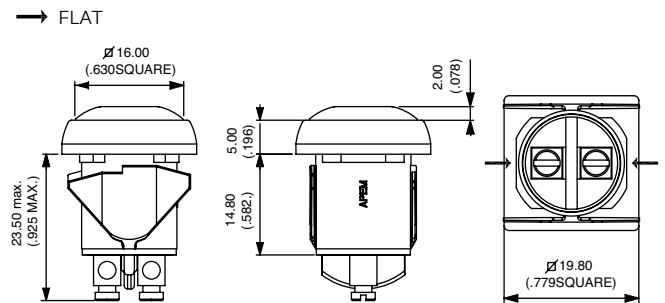
**IQC3F**  Normally Open



## SQUARE - NON-ILLUMINATED SCREW TERMINALS



**IQC3V**  Normally Open



### CONTACT MATERIALS

BASIC P/N



- 4 Silver, gold plated (200 mA 48 VDC)
- 7 Silver, gold plated (5 A 28 VDC)
- 2 Silver

Contacts 4 and 7 only for solder lug and flying lead terminals.  
Contacts 2 only for screw terminals.

### ACTUATOR COLORS

BASIC P/N



- 1 Blue
- B Dark blue
- 2 Black
- 3 Green
- 4 Grey
- 5 Yellow
- 6 Red
- 7 White
- 9 Orange
- A Satin chrome

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## BUSHING AND BEZEL



2 Black (standard)

## LED COLORS



|       |                 |
|-------|-----------------|
| Blank | Non-illuminated |
| LOS   | Super Red       |
| LOY   | Yellow          |
| LOG   | Green           |
| LOB   | Blue            |
| LOW   | White           |
| LSG   | Red/green       |
| LYG   | Yellow/green    |

# IQ series

Sealed pushbutton switches • bushing  $\varnothing$  16 mm •  
snap-in mounting • latching



## DISTINCTIVE FEATURES

- Snap-in mounting for easy installation
- Latching action models
- Illuminated or non-illuminated
- Flat round actuator for optional marking
- Sealed to IP54



## ENVIRONMENTAL SPECIFICATIONS

- Front panel sealing : IP54 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 (-40 °F to +185 °F)



## ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load (gold plated contacts) :
  - Code 4 : 100 mA 24 VDC, 200,000 cycles
  - Code 7 : 4 A 12 VDC, 200,000 cycles  
1 A 48 VDC, 200,000 cycles  
3 A 48 VDC, 75,000 cycles
- Initial contact resistance : 100 m $\Omega$  max.
- Insulation resistance : 1 G $\Omega$  min. at 500 VDC
- Dielectric strength : 1,500 Vrms

### LED COMPONENT SPECIFICATIONS

| LED color       | Forward current | Typ. forward voltage | Max. forward voltage |
|-----------------|-----------------|----------------------|----------------------|
| Super red (L0S) | 20 mA           | 1.95 V               | 1.95 V               |
| Yellow (L0Y)    | 20 mA           | 2 V                  | 2.05 V               |
| Green (L0G)     | 20 mA           | 2.1 V                | 2.5 V                |
| Blue (L0B)      | 20 mA           | 3.2 V                | 4 V                  |

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.

The company reserves the right to change specifications without notice.





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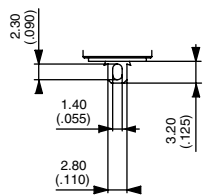
## GENERAL SPECIFICATIONS

- Panel thickness :  
with flat seal : 2.20 mm (.088) max.  
without flat seal : 3 mm (.118) max.
- Total travel : 2.5 mm (.098) ± 0.3 mm
- Typical operating force : 5 N ± 2 N
- Low level or mechanical life : 200,000 cycles
- Soldering : 320 °C (608 °F) max. for 3 sec.

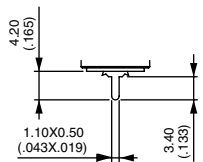
## MATERIALS

- Case : thermoplastic UL94-V0
- Plunger : polyamide
- Bushing/bezel : polyamide
- Contacts : silver, gold plated (codes 4 and 7)
- 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

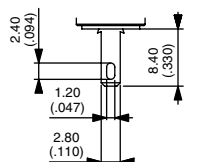
## TERMINALS



Solder lug S



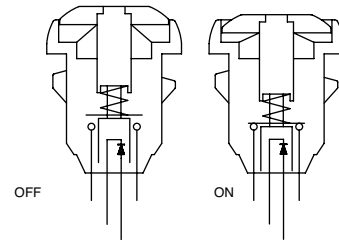
Straight P



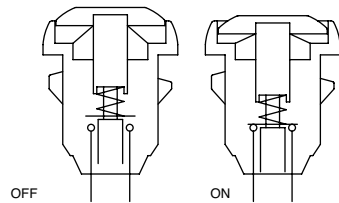
Quick-connect Z

## ELECTRICAL FUNCTIONS

### ILLUMINATED MODELS

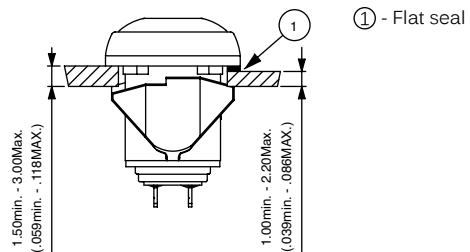
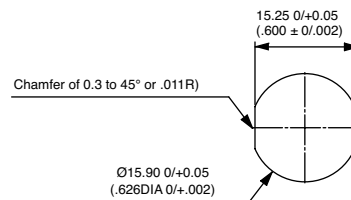


### NON-ILLUMINATED MODELS



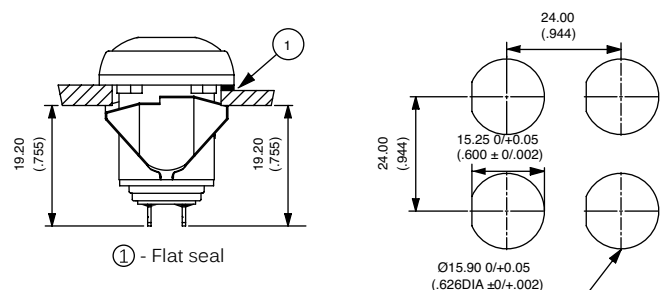
## MOUNTING

### PANEL CUT-OUT



① - Flat seal

### BACK OF PANEL SPACE REQUIREMENT - MATRIX MOUNTING

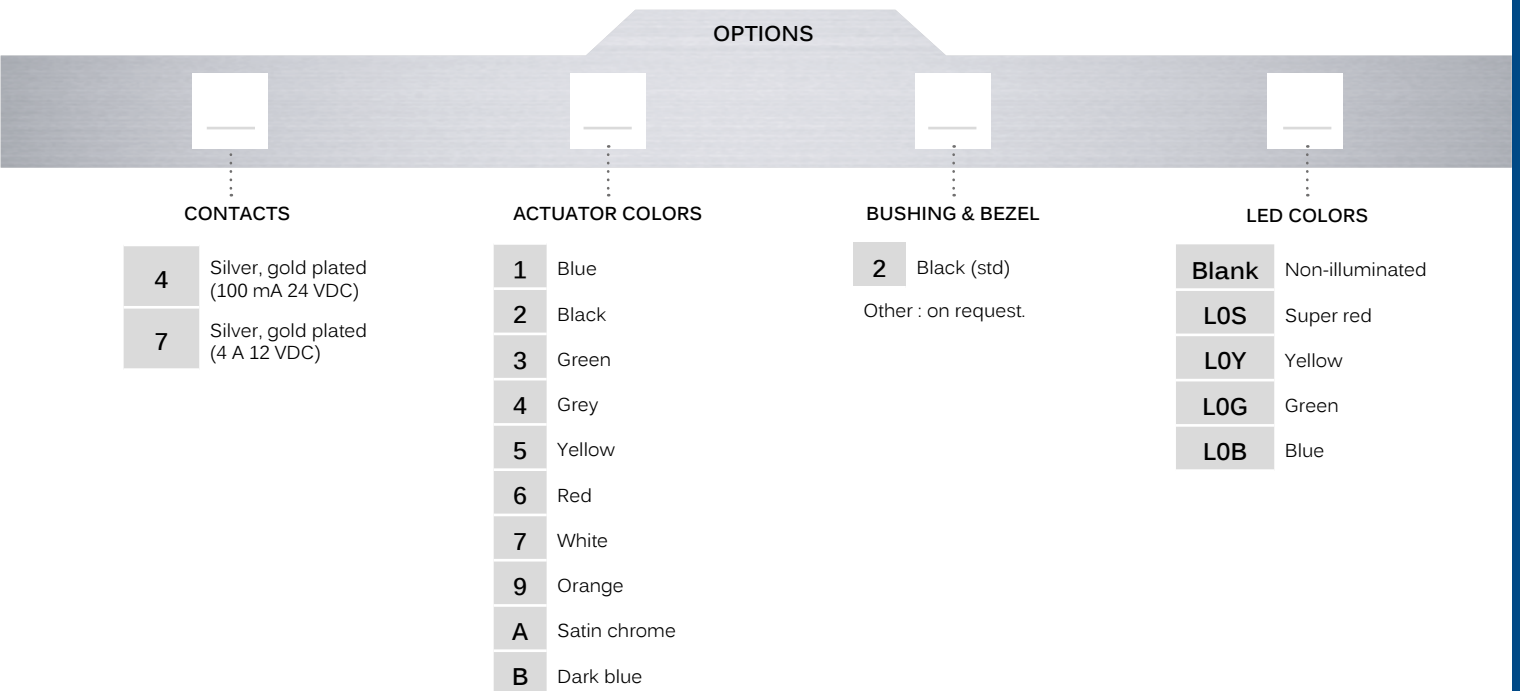
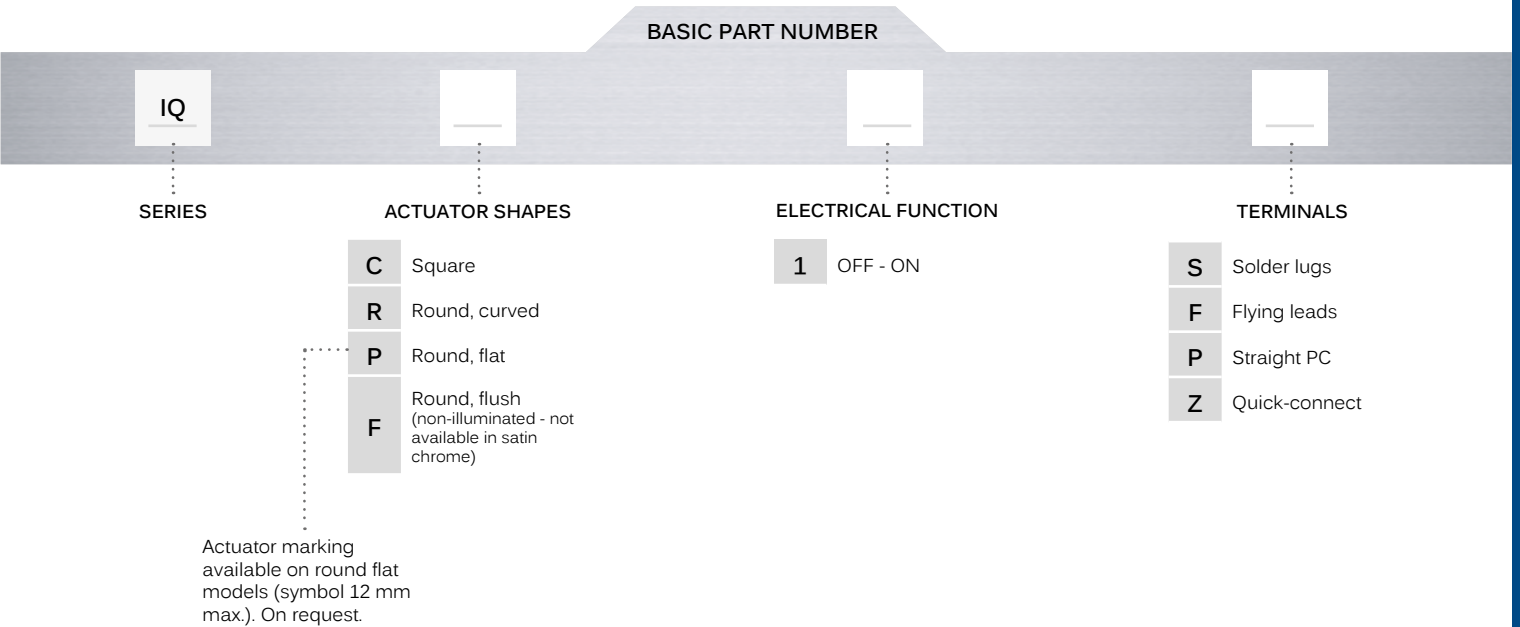


① - Flat seal

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snap-in mounting • latching



## BUILD YOUR PART NUMBER



## ABOUT THIS SERIES

On the following pages, you will find successively basic part numbers 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 flat seal

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## ROUND - ILLUMINATED SOLDER LUG TERMINALS



- Curved actuator
  - IQR1S** OFF - ON
- Flat actuator
  - IQP1S** OFF - ON

Also available with straight PC terminals : **IQ•1P**  
and quick-connect terminals : **IQ•1Z**.

## ROUND - ILLUMINATED FLYING LEAD TERMINALS



- Curved actuator
  - IQR1F** OFF - ON
- Flat actuator
  - IQP1F** OFF - ON

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

## ROUND - NON-ILLUMINATED SOLDER LUG TERMINALS



- Curved actuator
  - IQR1S** OFF - ON
- Flat actuator
  - IQP1S** OFF - ON

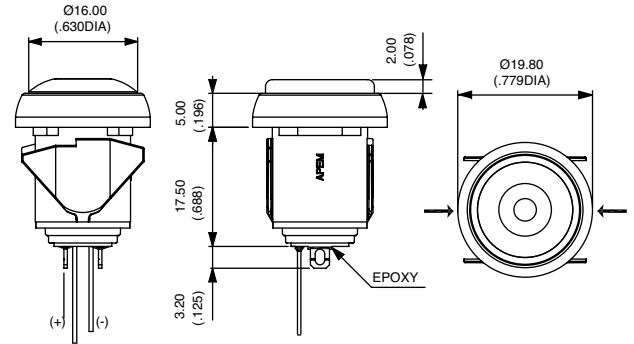
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## ROUND - NON-ILLUMINATED FLYING LEAD TERMINALS

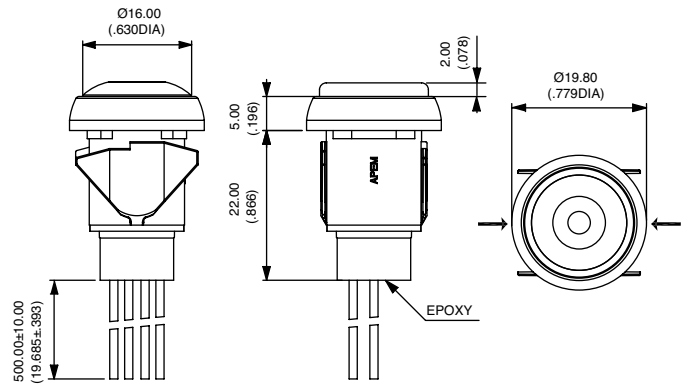


- Curved actuator
  - IQR1F** OFF - ON
- Flat actuator
  - IQP1F** OFF - ON

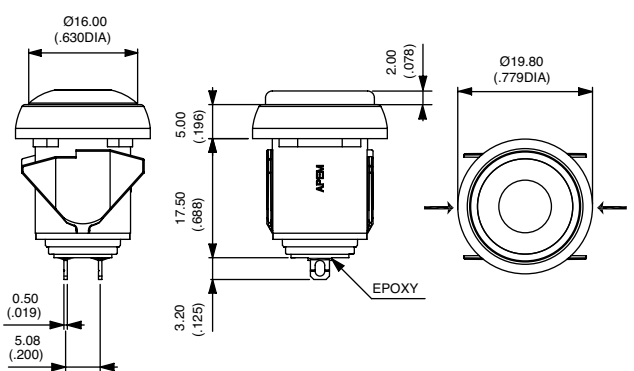
→ FLAT



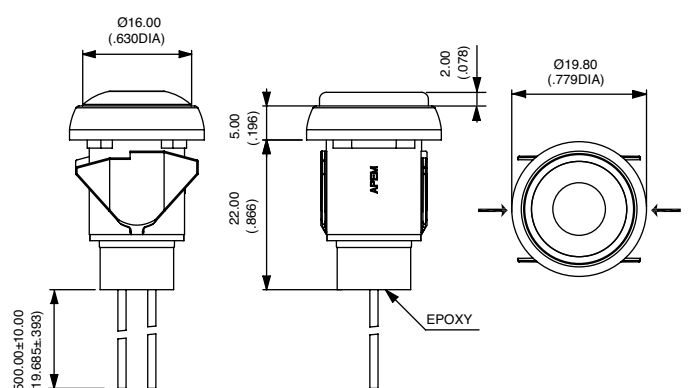
→ FLAT



→ FLAT



→ FLAT



Sealed pushbutton switches • bushing Ø 16 mm • snap-in mounting • latching

## SQUARE - ILLUMINATED SOLDER LUG TERMINALS



Curved actuator

**IQC1S**

OFF - ON

Also available with straight PC terminals : IQC14  
& quick-connect terminals : IQC1Z.

## SQUARE - ILLUMINATED FLYING LEAD TERMINALS



Curved actuator

**IQC1F**

OFF - ON

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

## SQUARE - NON-ILLUMINATED SOLDER LUG TERMINALS



Curved actuator

**IQC1S**

OFF - ON

Also available with straight PC terminals : IQC1P  
& quick-connect terminals : IQC1Z.

## SQUARE - NON-ILLUMINATED FLYING LEAD TERMINALS

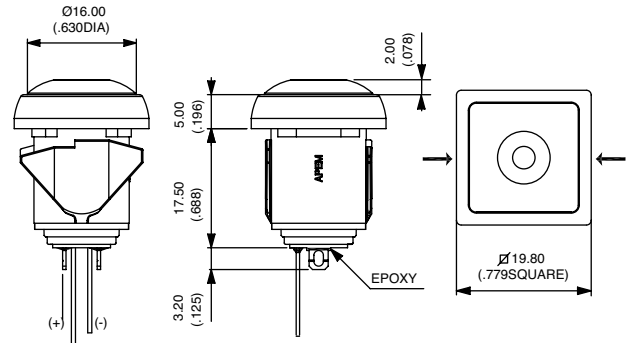


Curved actuator

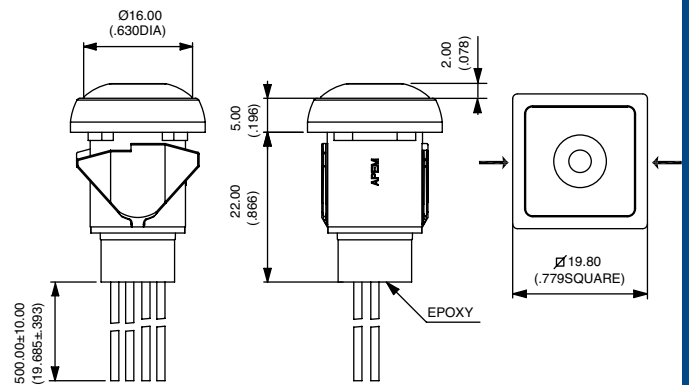
**IQC1F**

OFF - ON

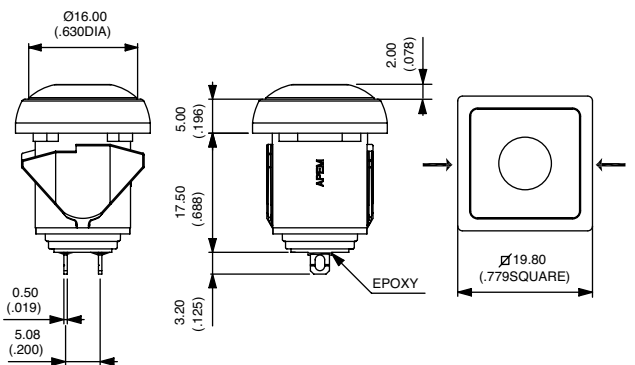
→ FLAT



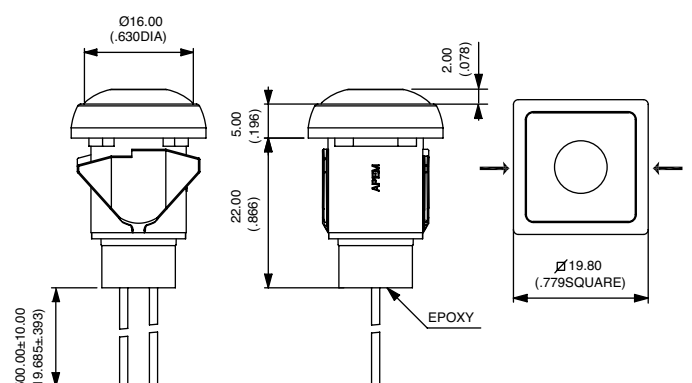
→ FLAT



→ FLAT



→ FLAT



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## CONTACT MATERIALS



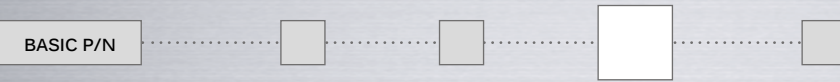
- 4 Silver, gold plated (100 mA 24 VDC)
- 7 Silver, gold plated (4 A 12 VDC)

## ACTUATOR COLOR



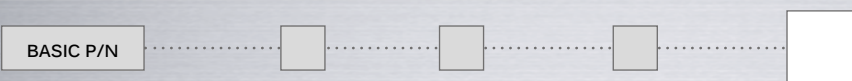
- 1 Blue
- B Dark blue
- 2 Black
- 3 Green
- 4 Grey
- 5 Yellow
- 6 Red
- 7 White
- 9 Orange
- A Satin chrome

## BUSHING AND BEZEL



- 2 Black (standard)

## LED COLORS



- Blank Non-illuminated
- LOS Super Red
- LOY Yellow
- LOG Green
- LOB Blue