Like the IR series, the IQ series is a range of sealed pushbutton switches with dia. 16 mm bushing.
But IQ pushbuttons feature snap-in mounting for easier and faster installation.
Momentary and latching versions are available.

Main features

- Snap-in mounting for easy installation
- Tactile feedback
- Sealed to IP67
- Illuminated or non-illuminated
- Square or round actuator
- Wide choice of actuator and illumination colours
- Flat round actuator for optional marking

Momentary versions

- Electrical function : NO
- Five terminal options, including screw terminals
- Silver contacts for screw terminal types
- Gold plated contacts for other types

Solder lug terminals   Flying lead terminals   Screw terminals

Latching versions

- Electrical function : OFF-ON
- Four terminal options
- Gold plated contacts

Solder lug terminals   Flying lead terminals

IQ series

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

Distinctive features and specifications

❑ **Snap-in mounting for easy installation**

❑ **Momentary models**

❑ **Illuminated or non-illuminated**

❑ **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
- Operating temperature : -40°C to +85°C

ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load :
  - Gold plated silver contacts (code 4) : 200mA 48VDC
  - Silver contacts (code 2) - screw terminals : 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 (L0S)	20mA	2,1V	2,3V
Yellow (L0Y)	20mA	2,1V	2,3V
Green (L0G)	20mA	2,1V	2,3V
Blue (L0B)	20mA	3,2V	3,8V
White (L0W)	20mA	3,35V	4,25V

A resistor must be series-connected by the user.

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

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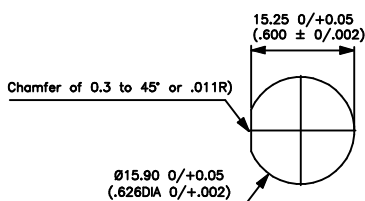
GENERAL SPECIFICATIONS

- 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 : 4N +/- 2N
- Mechanical life : 1.000.000 cycles
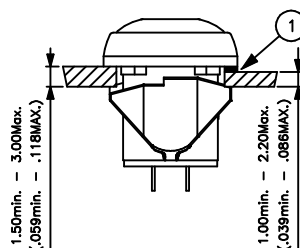- Soldering : 320°C max. for 3 sec.

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 mm²
- LED wire : AWG26, section 0,12 mm²
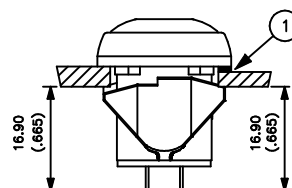- Lens : polycarbonate
- Terminal seal : epoxy
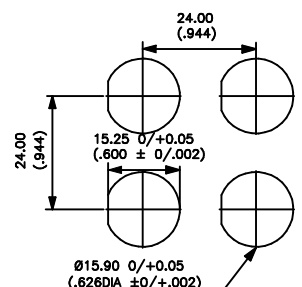

MOUNTING

Panel cut-out   ① Flat seal   **Back of panel space requirement**   **Matrix mounting**

15.25 0/+0.05 (.600 ± 0/.002)

Chamfer of 0.3 to 45° or .011R

Ø15.90 0/+0.05 (.626DIA 0/+.002)

1.50min. – 3.00Max. (.059min. – .118MAX.)

1.00min. – 2.20Max. (.039min. – .086MAX.)

16.90 (.665)

16.90 (.665)

24.00 (.944)

24.00 (.944)

15.25 0/+0.05 (.600 ± 0/.002)

Ø15.90 0/+0.05 (.626DIA ±0/+.002)

APEM

MODEL STRUCTURE

IQ ☐ ☐ ☐ ☐

SERIES	Actuator shape	Electrical function	Terminals	Contacts
	C Square	**3** Normally open (NO)	**S** Solder lugs	**4** Silver, gold plated
	R Round, curved		**F** Flying leads	**2** Silver (screw terminals only)
	P Round, flat		**P** Straight PC	
			Z Quick-connect (non-illuminated)	
			V Screw (non-illuminated)	

OPTIONS ● ● ●

☐ ☐ ☐

Actuator colour	Bushing & bezel finish	LED colour
1 Blue	**2** Black (std)	**Blank** Non-illum.
2 Black	Other : on request.	**L0S** Super red
3 Green		**L0Y** Yellow
5 Yellow		**L0G** Green
6 Red		**L0B** Blue
7 White		**L0W** White
9 Orange		
A Satin chrome		
B Dark blue		

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.

Mounting accessories : Standard hardware supplied : 1 flat seal

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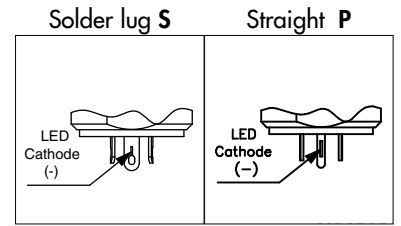
IQ series

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

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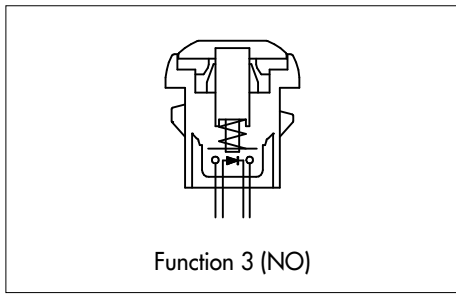
- Five LED colours
- Tin plated LED terminals
- Gold plated contacts

Function 3 (NO)

Solder lug **S**   Straight **P**

LED Cathode (-)   LED Cathode (–)

MODEL STRUCTURE

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

Solder lug terminals

→ Flat

Curved actuator
IQR3S4   Normally Open

Flat actuator
IQP3S4   Normally Open

Ø16.00 (.630DIA)
2.00 (.078)
5.00 (.196)
3.60 (.141)
14.80 (.582)
4.50 (.177)
EPOXY
Ø19.80 (.779DIA)
2.00 (.078)
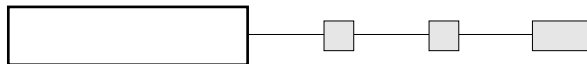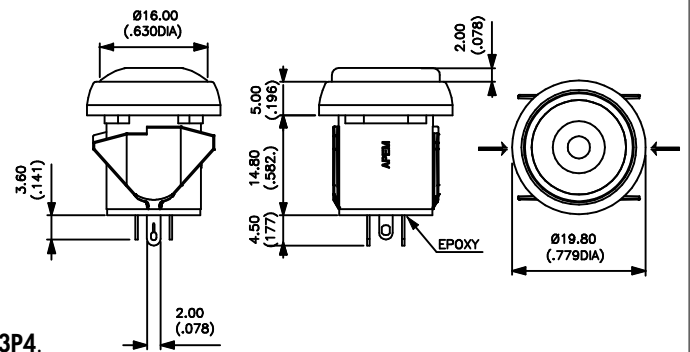
Also available with straight PC terminals : **IQ•3P4**.
LED colour is indicated by the bottom of the switch.
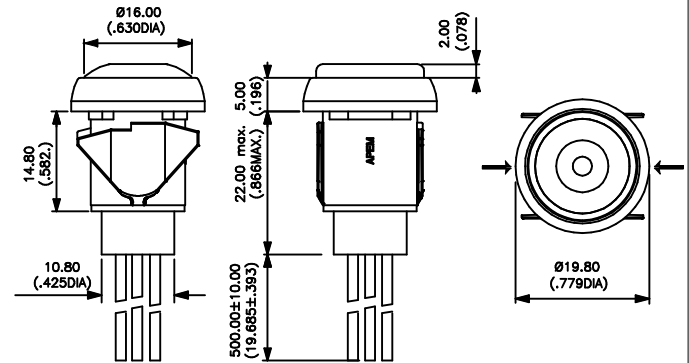
Sealed flying lead terminals

→ Flat

Curved actuator
IQR3F4   Normally Open

Flat actuator
IQP3F4   Normally Open

Ø16.00 (.630DIA)
2.00 (.078)
5.00 (.196)
14.80 (.582)
22.00 max. (.866MAX.)
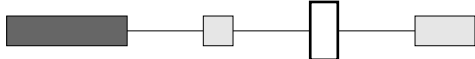10.80 (.425DIA)
500.00±10.00 (19.685±.393)
Ø19.80 (.779DIA)

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

ACTUATOR COLOUR

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

BUSHING AND BEZEL FINISH

2 : black (standard)

LED COLOUR

L0S : super red - **L0Y** : yellow - **L0G** : green - **L0B** : blue
L0W : white
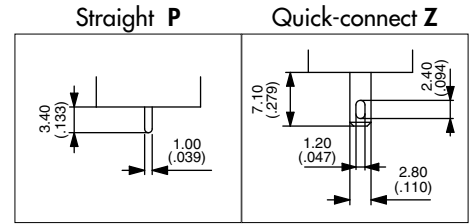
APEM

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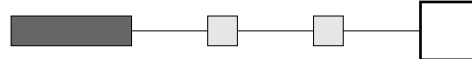
Sealed pushbutton switches - bushing Ø 16 mm - snap-in mounting - momentary

Round - non-illuminated
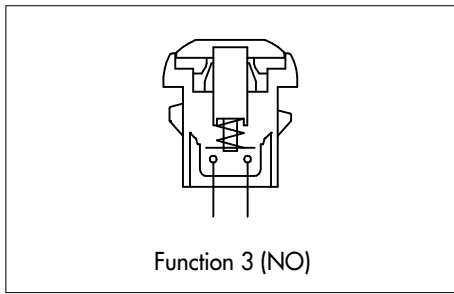
Function 3 (NO)

- Gold plated or silver contacts depending on terminal type

Straight **P**

3.40 (.133)   1.00 (.039)

Quick-connect **Z**

7.10 (.279)   2.40 (.094)   1.20 (.047)   2.80 (.110)

MODEL STRUCTURE

Actuator marking available on IQP models (symbol 12 mm max.). On request.
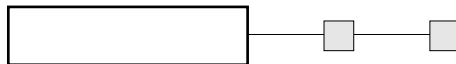
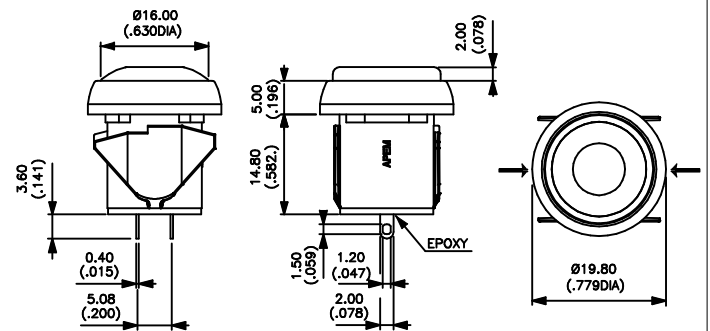## Solder lug terminals - gold plated contacts

→ Flat

Curved actuator
IQR3S4   Normally open

Flat actuator
IQP3S4   Normally open

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

Ø16.00 (.630DIA)   2.00 (.078)   5.00 (.196)   14.80 (.582)   3.60 (.141)   0.40 (.015)   5.08 (.200)   1.50 (.059)   1.20 (.047)   2.00 (.078)   EPOXY   Ø19.80 (.779DIA)

Sealed flying lead terminals - gold plated contacts

→ Flat

Curved actuator
IQR3F4   Normally open

Flat actuator
IQP3F4   Normally open

Ø16.00 (.630DIA)   2.00 (.078)   5.00 (.196)   14.80 (.582)   500.00±10.00 (19.685±.393)   Ø19.80 (.779DIA)

Screw terminals - silver contacts

→ Flat

Curved actuator
IQR3V2   Normally open

Flat actuator
IQP3V2   Normally open

Ø16.00 (.630DIA)   2.00 (.078)   5.00 (.196)   23.50 max. (.925 MAX.)   14.80 (.582)   Ø19.80 (.779DIA)
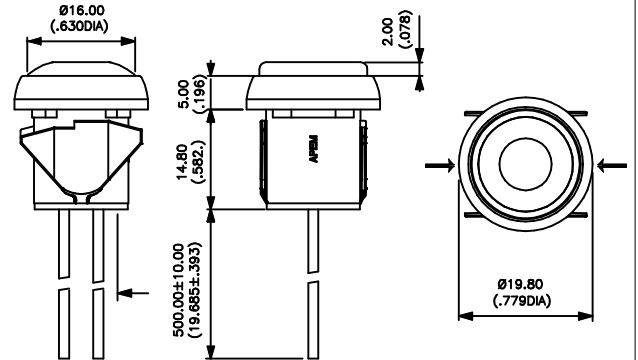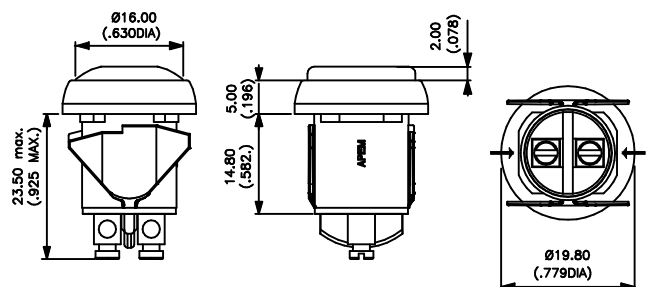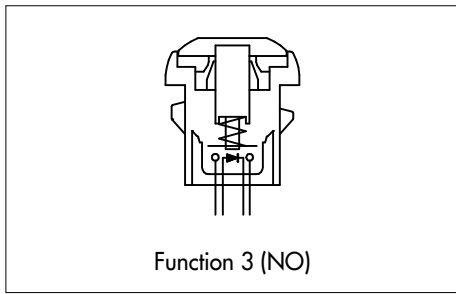

Actuator colour and bushing/bezel finish : select the desired codes on previous page.
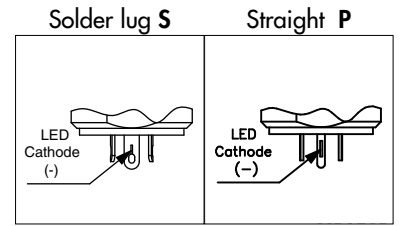
IQ series

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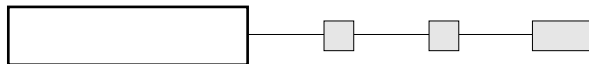
Square - illuminated

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

Function 3 (NO)
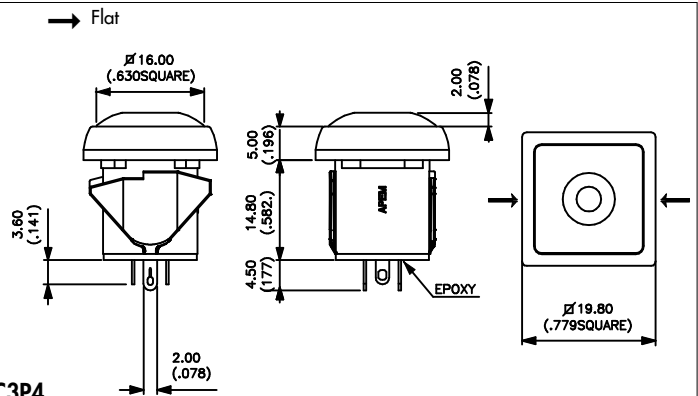
Solder lug **S**   Straight **P**

LED Cathode (-)   LED Cathode (—)

MODEL STRUCTURE

Solder lug terminals

→ Flat

IQC3S4   Normally Open

Ø 16.00 (.630 SQUARE)
2.00 (.078)
5.00 (.196)
14.80 (.582.)
3.60 (.141)
4.50 (.177)
EPOXY
2.00 (.078)
Ø 19.80 (.779 SQUARE)

Also available with straight PC terminals : **IQC3P4**.
LED colour is indicated by the bottom of the switch.
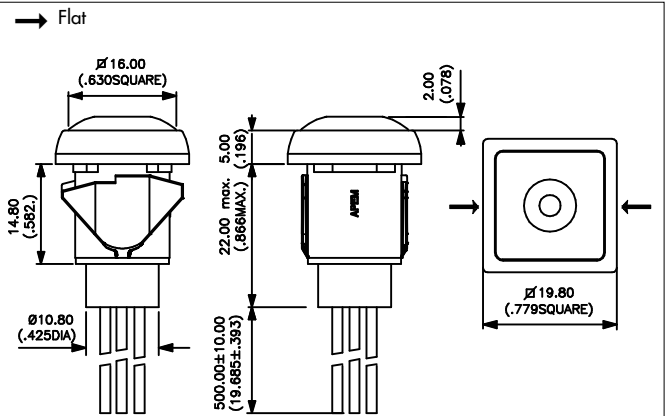
Sealed flying lead terminals

→ Flat

IQC3F4   Normally Open

Ø 16.00 (.630 SQUARE)
2.00 (.078)
5.00 (.196)
14.80 (.582.)
22.00 max. (.866 MAX.)
Ø 10.80 (.425 DIA)
500.00±10.00 (19.685±.393)
Ø 19.80 (.779 SQUARE)

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

ACTUATOR COLOUR

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

BUSHING AND BEZEL FINISH

2 : black (standard)

LED COLOUR

L0S : super red - **L0Y** : yellow - **L0G** : green - **L0B** : blue
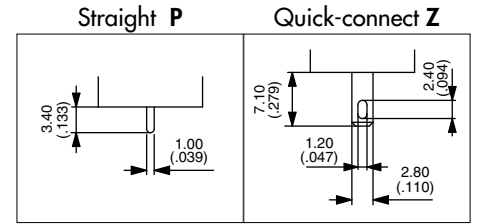**L0W** : white

APEM
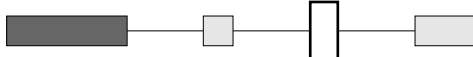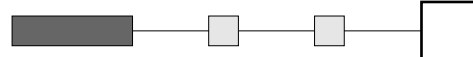
IQ series
Sealed pushbutton switches - bushing Ø 16 mm - snap-in mounting - momentary
Square - non-illuminated
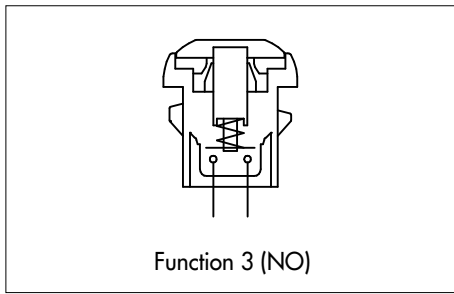
Function 3 (NO)

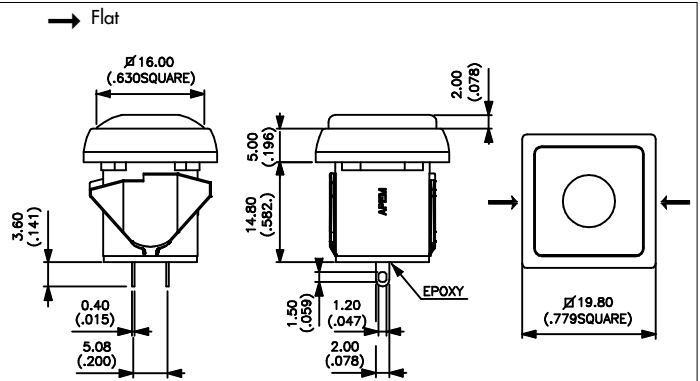• Gold plated or silver contacts depending on terminal type

Straight **P**

3.40 (.133) 1.00 (.039)

Quick-connect **Z**

7.10 (.279) 2.40 (.094) 1.20 (.047) 2.80 (.110)

MODEL STRUCTURE

Solder lug terminals - gold plated contacts

→ Flat

IQC3S4 Normally Open

Ø 16.00 (.630 SQUARE)

2.00 (.078)

5.00 (.196)

14.80 (.582)

3.60 (.141)

0.40 (.015)

5.08 (.200)

1.50 (.059) 1.20 (.047)

2.00 (.078)

EPOXY

Ø 19.80 (.779 SQUARE)
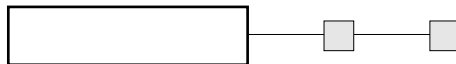
Also available with straight PC terminals : **IQC3P4** or quick-connect terminals : **IQC3Z4**.

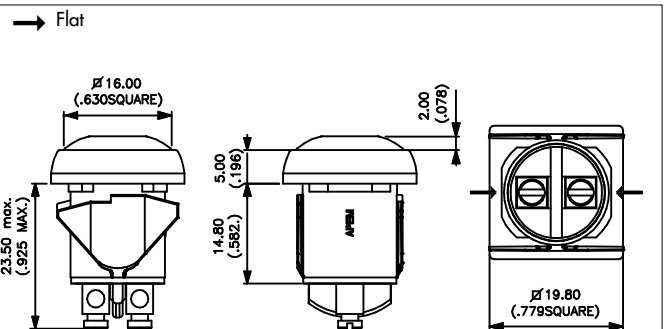## Sealed flying lead terminals - gold plated contacts
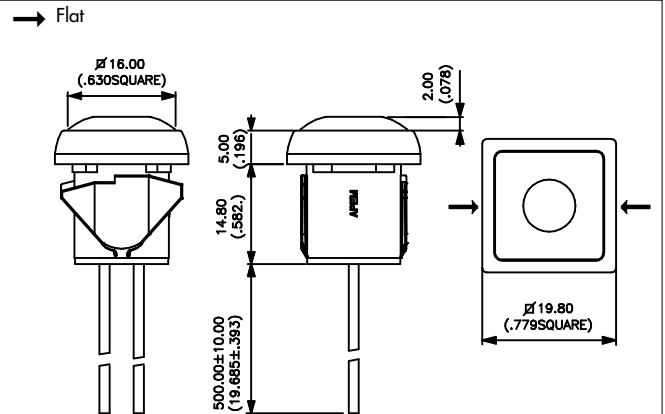
→ Flat

IQC3F4 Normally Open

Ø 16.00 (.630 SQUARE)

2.00 (.078)

5.00 (.196)

14.80 (.582)

500.00±10.00 (19.685±.393)

Ø 19.80 (.779 SQUARE)

Screw terminals - silver contacts

→ Flat

IQC3V2 Normally Open

Ø 16.00 (.630 SQUARE)

2.00 (.078)

5.00 (.196)

23.50 max. (.925 MAX.)

14.80 (.582)

Ø 19.80 (.779 SQUARE)

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

IQ series

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

Distinctive features and specifications

- ❏ **Snap-in mounting for easy installation**
- ❏ **Latching action models**
- ❏ **Illuminated or non-illuminated**
- ❏ **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
- Operating temperature : -40°C to +85°C

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

LED COMPONENT SPECIFICATIONS			
LED colour	Forward current	Typ. forward voltage	Max. forward voltage
Super red (L0S)	20mA	1,95V	1,95V
Yellow (L0Y)	20mA	2V	2,05V
Green (L0G)	20mA	3,2V	3,70V
Blue (L0B)	20mA	3,2V	4V

A resistor must be series-connected by the user.

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

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

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 : 5N +/- 2N
- Mechanical life : 200.000 cycles
- Soldering : 320°C max. for 3 sec.

MATERIALS

- Case : thermoplastic UL94-V0
- Plunger : polyamide
- Bushing/bezel : polyamide
- Contacts : silver, gold plated
- Multi-wire lead AWG20,
  section 0,6 mm²
- LED wire : AWG26,
  section 0,12 mm²
- Lens : polycarbonate
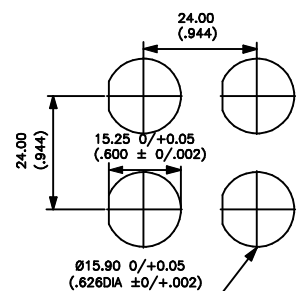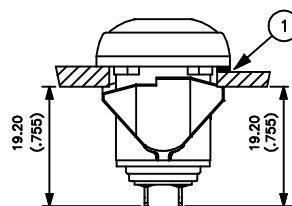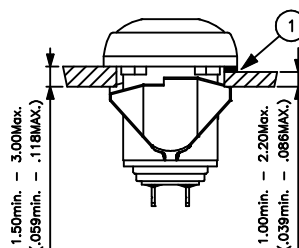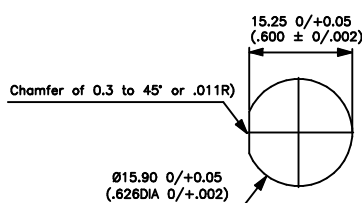- Terminal seal : epoxy

MOUNTING

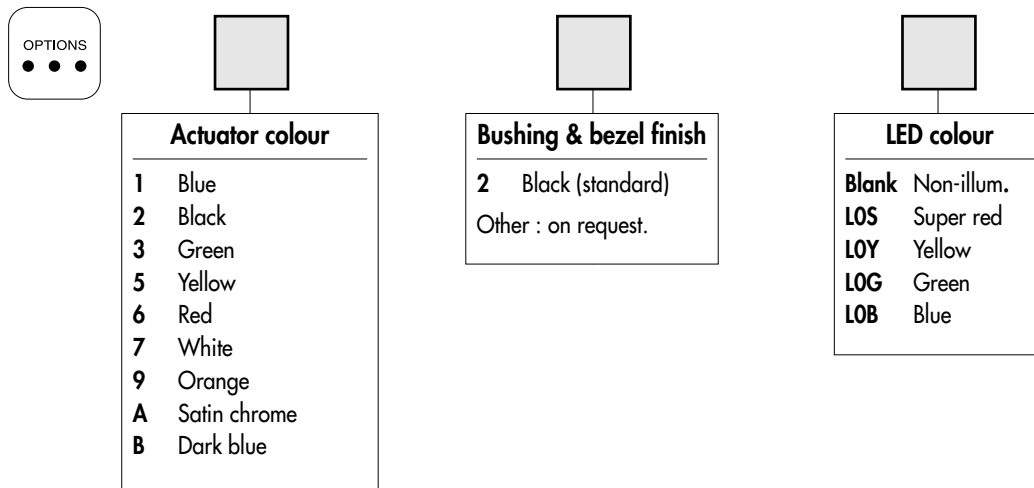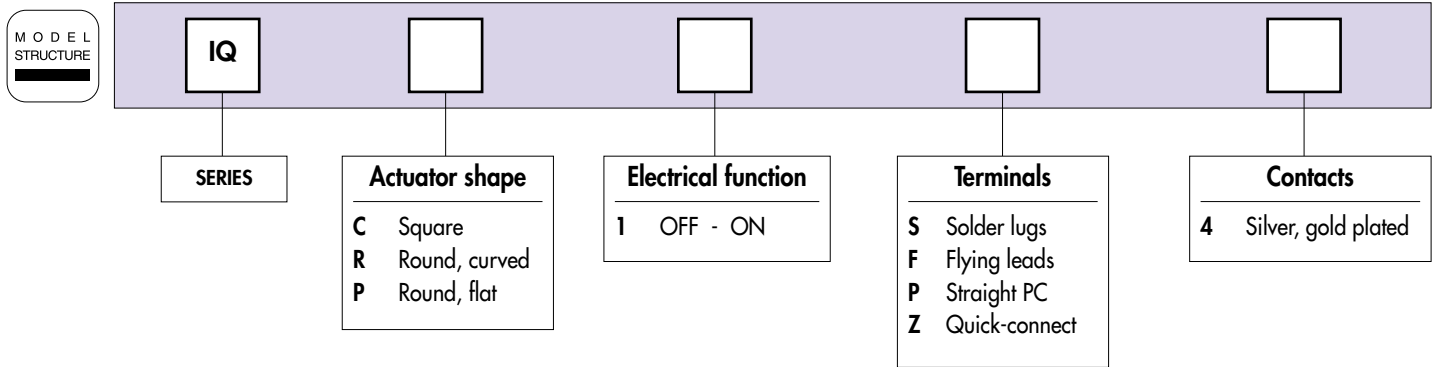**Panel cut-out**　　① Flat seal　　　　　　　　　**Back of panel space requirement**　　**Matrix mounting**

15.25 0/+0.05
(.600 ± 0/.002)

Chamfer of 0.3 to 45° or .011R

Ø15.90 0/+0.05
(.626DIA 0/+.002)

1.50min. – 3.00Max.
(.059min. – .118MAX.)

1.00min. – 2.20Max.
(.039min. – .086MAX.)

19.20
(.755)

19.20
(.755)

24.00
(.944)

24.00
(.944)

15.25 0/+0.05
(.600 ± 0/.002)

Ø15.90 0/+0.05
(.626DIA ±0/+.002)

MODEL STRUCTURE

IQ				
SERIES	**Actuator shape**	**Electrical function**	**Terminals**	**Contacts**
	C Square	1 OFF - ON	S Solder lugs	4 Silver, gold plated
	R Round, curved		F Flying leads	
	P Round, flat		P Straight PC	
			Z Quick-connect	

OPTIONS

Actuator colour	Bushing & bezel finish	LED colour
1 Blue	2 Black (standard)	**Blank** Non-illum.
2 Black	Other : on request.	**L0S** Super red
3 Green		**L0Y** Yellow
5 Yellow		**L0G** Green
6 Red		**L0B** Blue
7 White		
9 Orange		
A Satin chrome		
B Dark blue		

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.

Mounting accessories : Standard hardware supplied : 1 flat seal

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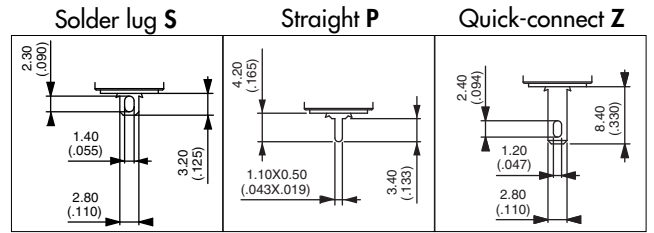
IQ series

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

Round - illuminated
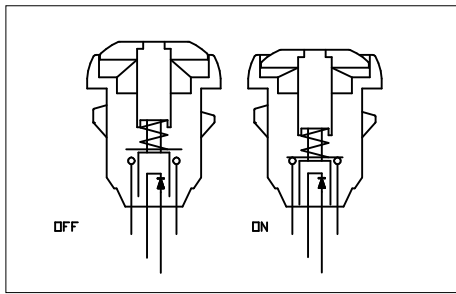
OFF   ON

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

Solder lug **S**	Straight **P**	Quick-connect **Z**
2.30 (.090) 1.40 (.055) 3.20 (.125) 2.80 (.110)	4.20 (.165) 1.10X0.50 (.043X.019) 3.40 (.133)	2.40 (.094) 8.40 (.330) 1.20 (.047) 2.80 (.110)

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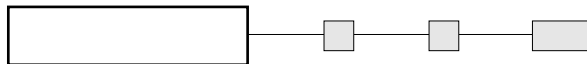
Plunger marking available on IRP models (symbol 12 mm max.). On request.

Solder lug terminals

→ Flat

Curved actuator
IQR1S4   OFF   -   ON

Flat actuator
IQP1S4   OFF   -   ON

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

Ø16.00 (.630DIA)
2.00 (.078)
Ø19.80 (.779DIA)
5.00 (.196)
17.50 (.688)
3.20 (.125)
EPOXY
(+) (−)
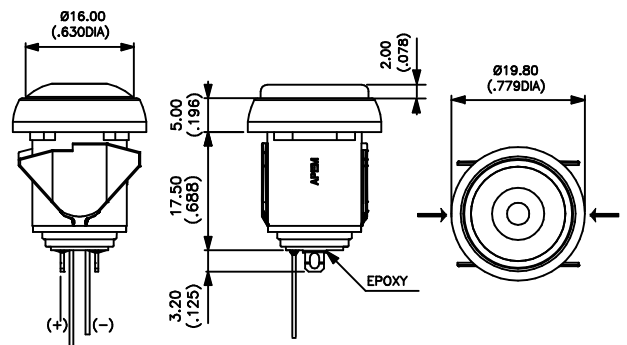
Sealed flying lead terminals

→ Flat

Curved actuator
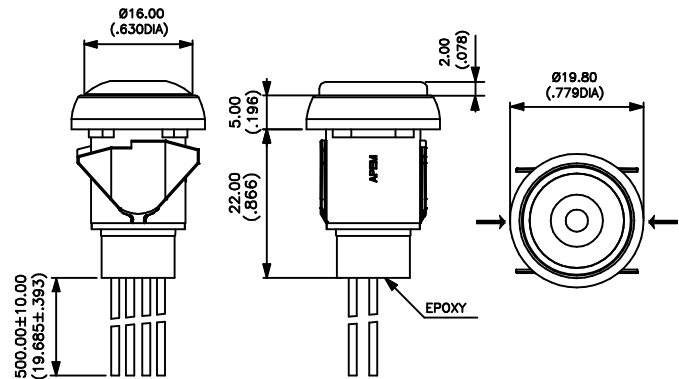**IQR1F4**   OFF   -   ON

Flat actuator
IQP1F4   OFF   -   ON

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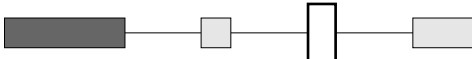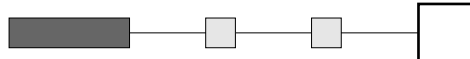red : LED anode (+), blue : LED cathode (-)

Ø16.00 (.630DIA)
2.00 (.078)
Ø19.80 (.779DIA)
5.00 (.196)
22.00 (.866)
500.00±10.00 (19.685±.393)
EPOXY

ACTUATOR COLOUR

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

BUSHING AND BEZEL FINISH

2 : black (standard)

LED COLOUR

L0S : super red - **L0Y** : yellow - **L0G** : green - **L0B** : blue

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APEM

• Gold plated contacts

Solder lug **S** Straight **P** Quick-connect **Z**
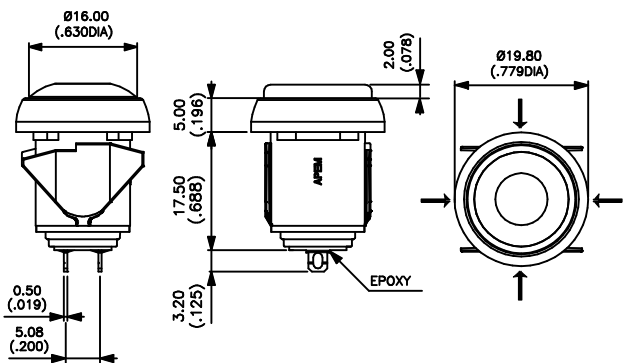
MODEL STRUCTURE

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

Solder lug terminals

→ Flat

Curved actuator
IQR1S4 OFF - ON

Flat actuator
IQP1S4 OFF - ON

Ø16.00 (.630DIA)
2.00 (.078)
5.00 (.196)
17.50 (.688)
Ø19.80 (.779DIA)
0.50 (.019)
5.08 (.200)
3.20 (.125)
EPOXY

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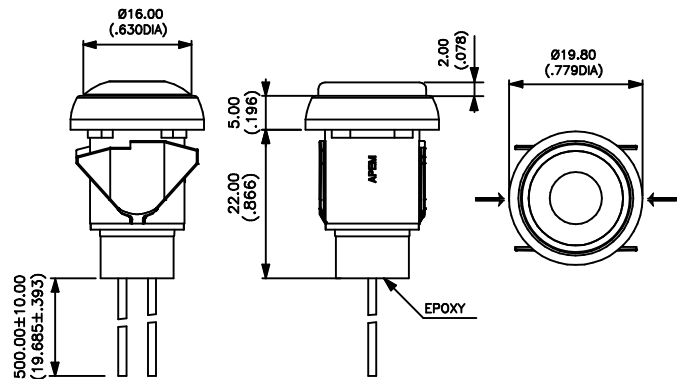& quick-connect terminals : **IQ•1Z4**.

Sealed flying lead terminals

→ Flat

Curved actuator
IQR1F4 OFF - ON

Flat actuator
IQP1F4 OFF - ON

Ø16.00 (.630DIA)
2.00 (.078)
5.00 (.196)
22.00 (.866)
Ø19.80 (.779DIA)
500.00±10.00 (19.685±.393)
EPOXY

ACTUATOR COLOUR

1 : blue - **2** : black - **3** : green - **5** : yellow - **6** : red - **7** : white - **9** : orange - **A** : satin chrome - **B** : dark blue
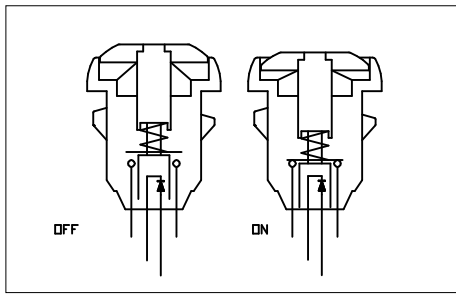
BUSHING AND BEZEL FINISH

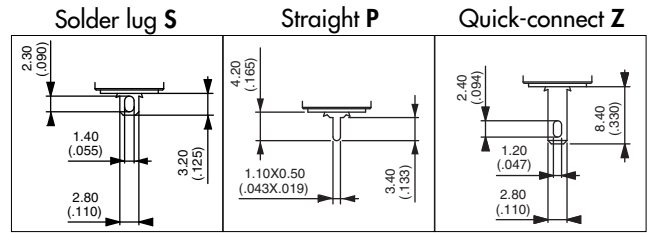**2** : black (standard)

IQ series

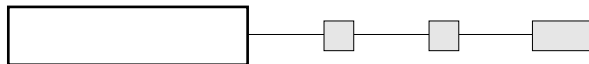## Sealed pushbutton switches - bushing Ø 16 mm - snap-in mounting - latching

Square - illuminated

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

OFF   ON

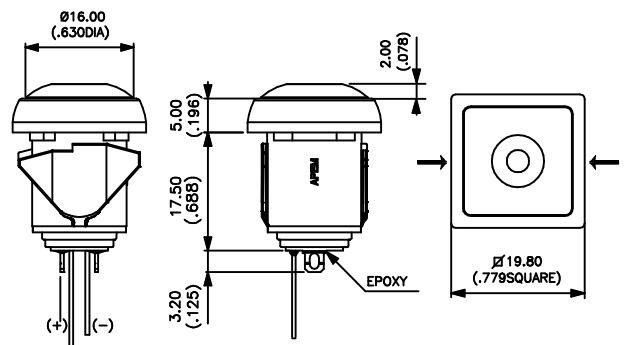Solder lug **S**   Straight **P**   Quick-connect **Z**

2.30 (.090)   4.20 (.165)   2.40 (.094)   8.40 (.330)
1.40 (.055)   3.20 (.125)   1.10X0.50 (.043X.019)   3.40 (.133)   1.20 (.047)
2.80 (.110)   2.80 (.110)

MODEL STRUCTURE

Solder lug terminals

→ Flat

Curved actuator
IQC1S4   OFF - ON

Ø16.00 (.630DIA)
2.00 (.078)
5.00 (.196)
17.50 (.688)
3.20 (.125)
APEM
EPOXY
Ø19.80 (.779SQUARE)
(+) (−)

Also available with straight PC terminals : **IQC1P4**
& quick-connect terminals : **IQC1Z4**.

Sealed flying lead terminals

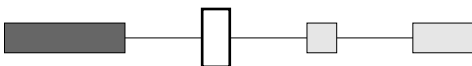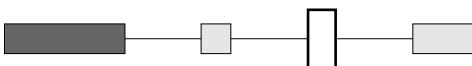→ Flat

Curved actuator
IQC1F4   OFF - ON

Ø16.00 (.630DIA)
2.00 (.078)
5.00 (.196)
22.00 (.866)
500.00±10.00 (19.685±.393)
APEM
EPOXY
Ø19.80 (.779SQUARE)

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

ACTUATOR COLOUR

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

BUSHING AND BEZEL FINISH

2 : black (standard)

LED COLOUR

L0S : super red - **L0Y** : yellow - **L0G** : green - **L0B** : blue

---

APEM

• Gold plated contacts

Solder lug **S** | Straight **P** | Quick-connect **Z**

2.30 (.090) 4.20 (.165) 2.40 (.094)
1.40 (.055) 3.20 (.125) 1.10X0.50 (.043X.019) 3.40 (.133) 1.20 (.047) 8.40 (.330)
2.80 (.110) 2.80 (.110)

MODEL STRUCTURE

Solder lug terminals

→ Flat

Curved actuator
IQC1S4   OFF - ON

Ø16.00 (.630DIA)
2.00 (.078)
5.00 (.196)
17.50 (.688)
0.50 (.019)
5.08 (.200)
3.20 (.125)
EPOXY
Ø19.80 (.779SQUARE)

Also available with straight PC terminals : **IQC1P4**
& quick-connect terminals : **IQC1Z4**.

Sealed flying lead terminals

→ Flat

Curved actuator
IQC1F4   OFF - ON

Ø16.00 (.630DIA)
2.00 (.078)
5.00 (.196)
22.00 (.866)
500.00±10.00 (19.685±.393)
EPOXY
Ø19.80 (.779SQUARE)

ACTUATOR COLOUR

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

BUSHING AND BEZEL FINISH

2 : black (standard)

APEM