B1

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 IP54**
• **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 silver contacts for other types

Solder lug terminals   Flying lead terminals   Screw terminals

Latching versions

• Electrical function : OFF-ON
• Four terminal options
• Gold plated silver 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 IP54**

B1

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

ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load :
  - Gold plated contacts : Code 4 : 200mA 48VDC, 500.000 cycles
    Code 7 : 5A 28VDC, 70.000 cycles
  - Silver contacts (code 2) - screw terminals : 4A 48VDC, 500.000 cycles
- Initial contact resistance : 100 mΩ max.
- Insulation resistance : 1 GΩ min. at 500VDC
- Dielectric strength : 1.500 Vrm

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
Red/green (SG)	20mA	Red:1,95V-Green:2,1V	2,5V

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
- Low level or 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 and **7** : silver, gold plated
  2 : silver (screw terminals)
- Multi-wire lead AWG20,
  section 0,6 mm²
- LED wire : AWG26,
  section 0,12 mm²
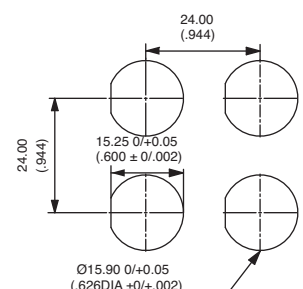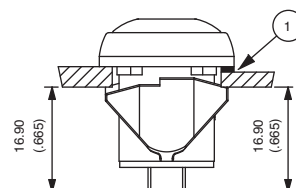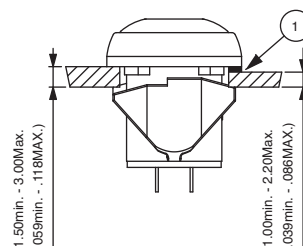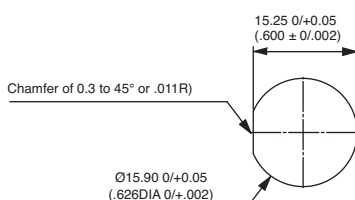- Lens : polycarbonate
- Terminal seal : epoxy

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)

MODEL STRUCTURE

| IQ | | | | |

SERIES

Actuator shape

C	Square
R	Round, curved
P	Round, flat

Electrical function

3	Normally open (NO)

Terminals

S	Solder lugs
F	Flying leads
P	Straight PC
Z	Quick-connect (non-illuminated)
V	Screw (non-illuminated), silver contact only

Contacts

4 & 7	Silver, gold plated
2	Silver (screw terminals only)

B1

OPTIONS

Actuator colour

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

Bushing & bezel finish

2	Black (std)

Other : on request.

LED colour

Blank	Non-illum.
L0S	Super red
L0Y	Yellow
L0G	Green
L0B	Blue
L0W	White
SG	Red/green

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.

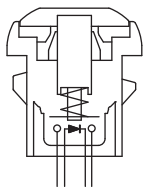**Mounting accessories** : Standard hardware supplied : 1 flat seal

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
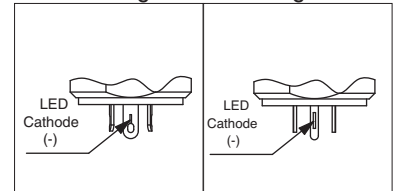
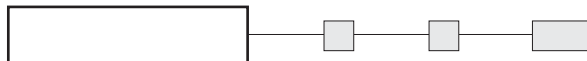*Round - illuminated*

Function 3 (NO)

- Five LED colours
- Tin plated LED terminals
- Gold plated contacts (4 or 7)
  See electrical specifications.
  For high current, replace 4 with 7
  in the part numbers below.

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

Also available with straight PC terminals : **IQ•3P4**.
LED colour is indicated by the bottom of the switch.
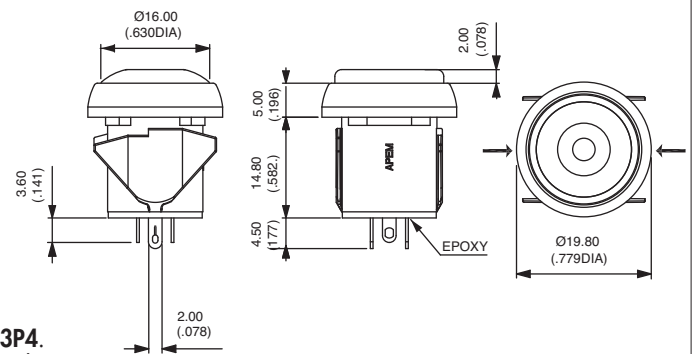
Ø16.00 (.630DIA)

2.00 (.078)

5.00 (.196)

14.80 (.582)

4.50 (.177)

3.60 (.141)

2.00 (.078)

EPOXY

Ø19.80 (.779DIA)

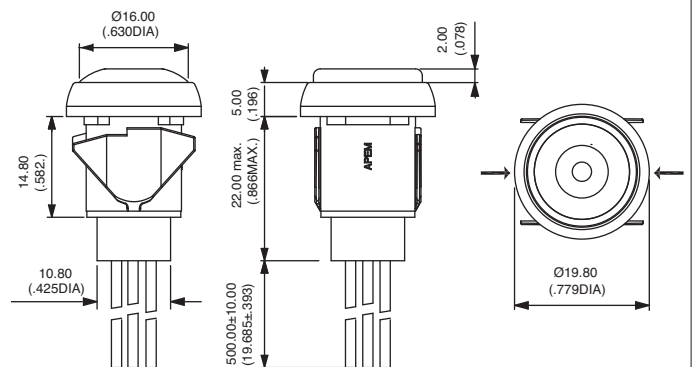### Sealed flying lead terminals

→ Flat

Curved actuator
IQR3F4   Normally Open

Flat actuator
IQP3F4   Normally Open

Wire colours : black : NO contact,
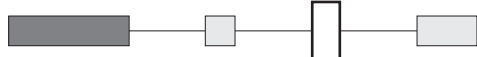red : LED anode (+), blue : LED cathode (-)
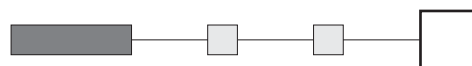
Ø16.00 (.630DIA)

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)

ACTUATOR COLOUR

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

BUSHING AND BEZEL FINISH

2 : black (standard)

LED COLOUR
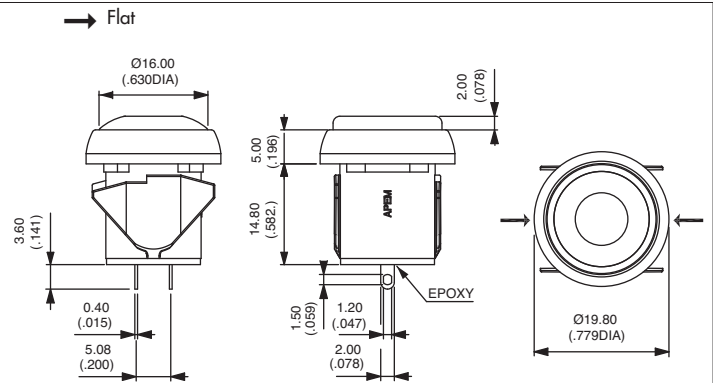
L0S : super red - **L0Y** : yellow - **L0G** : green - **L0B** : blue
L0W : white - **SG** : red/greeen

Function 3 (NO)

- Gold plated or silver contacts depending on terminal type
- Gold plated contacts (4 or 7) See electrical specifications. For high current, replace 4 with 7 in the part numbers below.

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.

B1

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)
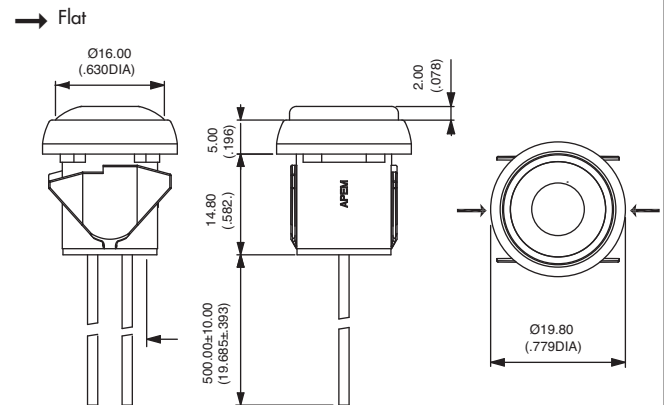
Screw terminals - silver contacts

→ Flat

Curved actuator
IQR3V2   Normally open

Flat actuator
IQP3V2   Normally open
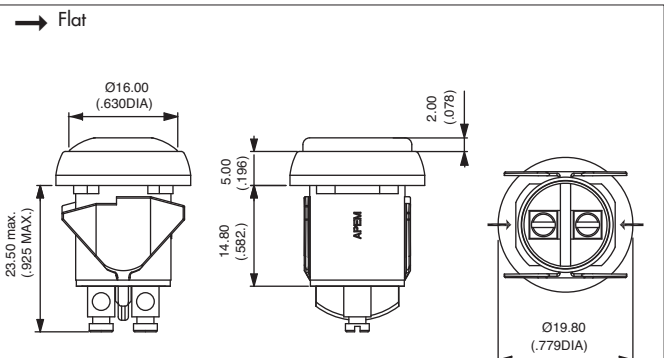
Ø16.00 (.630DIA)
2.00 (.078)
5.00 (.196)
23.50 max. (.925 MAX.)
14.80 (.582)
Ø19.80 (.779DIA)
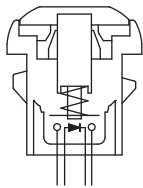

Contact material, actuator colour and bushing/bezel finish : select the desired codes on previous page.

IQ series

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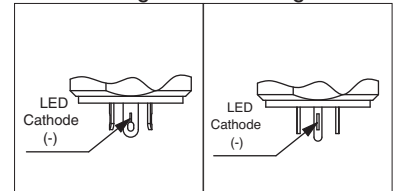
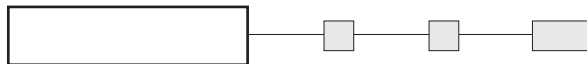*Square - illuminated*

Function 3 (NO)

- Five LED colours
- Tin plated LED terminals
- Gold plated contacts (4 or 7)
  See electrical specifications.
  For high current, replace 4 with 7
  in the part numbers below.
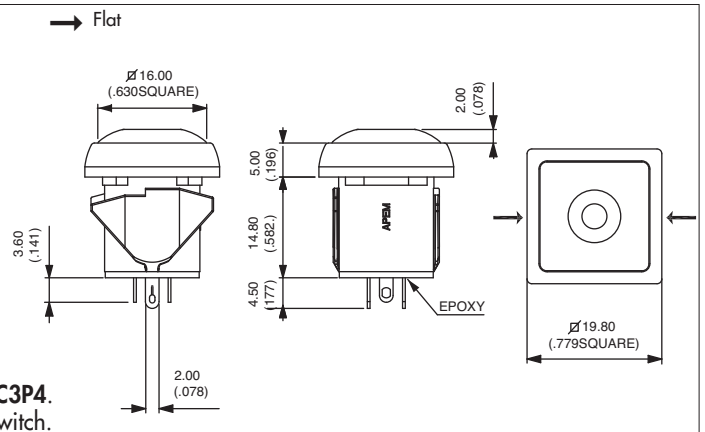
Solder lug **S**   Straight **P**

LED Cathode (-)   LED Cathode (-)

MODEL STRUCTURE

Solder lug terminals

→ Flat

IQC3S4   Normally Open

Ø16.00 (.630SQUARE)
5.00 (.196)
2.00 (.078)
3.60 (.141)
14.80 (.582)
4.50 (.177)
APEM
EPOXY
Ø19.80 (.779SQUARE)
2.00 (.078)

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

Sealed flying lead terminals
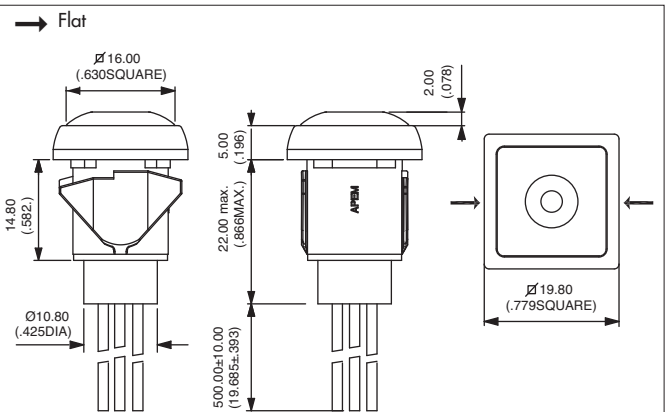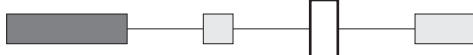
→ Flat

IQC3F4   Normally Open

Ø16.00 (.630SQUARE)
5.00 (.196)
2.00 (.078)
14.80 (.582)
22.00 max. (.866MAX.)
Ø10.80 (.425DIA)
500.00±10.00 (19.685±.393)
APEM
Ø19.80 (.779SQUARE)

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

ACTUATOR COLOUR

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

BUSHING AND BEZEL FINISH

2 : black (standard)

LED COLOUR
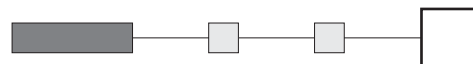
L0S : super red - **L0Y** : yellow - **L0G** : green - **L0B** : blue
L0W : white - **SG** : red/green

Function 3 (NO)

- Gold plated or silver contacts depending on terminal type
- Gold plated contacts (4 or 7) See electrical specifications. For high current, replace 4 with 7 in the part numbers below.

Straight **P**

3.40 (.133)   1.00 (.039)

Quick-connect **Z**

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

B1

MODEL STRUCTURE

Solder lug terminals - gold plated contacts

→ Flat

IQC3S4   Normally Open

Ø16.00 (.630SQUARE)

2.00 (.078)

5.00 (.196)

14.80 (.582.)

3.60 (.141)

0.40 (.015)

5.08 (.200)

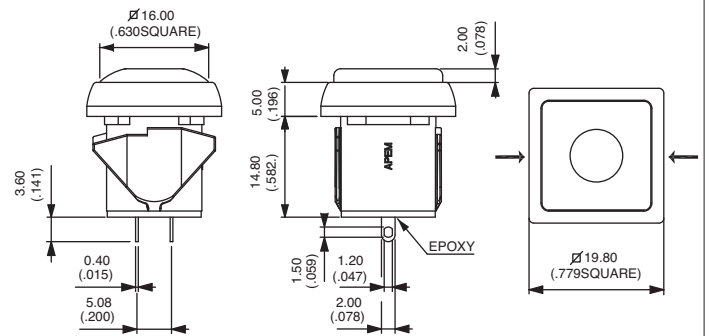1.50 (.059)   1.20 (.047)   EPOXY

2.00 (.078)

Ø19.80 (.779SQUARE)
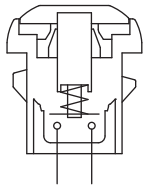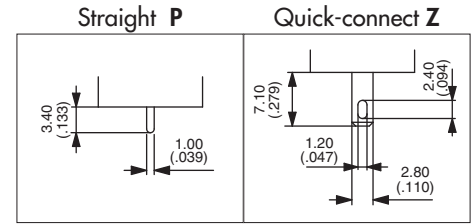
Also available with straight PC terminals : **IQC3P4** or quick-connect terminals : **IQC3Z4**.
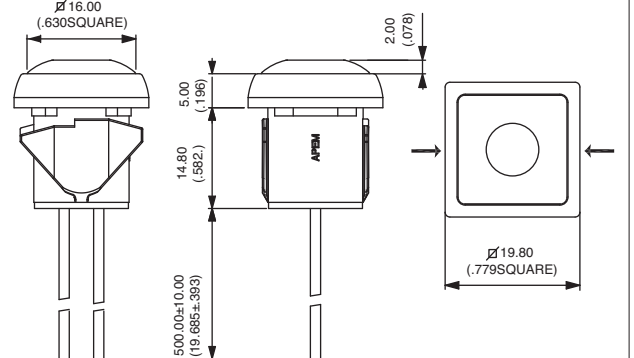

Sealed flying lead terminals - gold plated contacts

→ Flat

IQC3F4   Normally Open

Ø16.00 (.630SQUARE)

2.00 (.078)

5.00 (.196)

14.80 (.582.)

500.00±10.00 (19.685±.393)

Ø19.80 (.779SQUARE)

Screw terminals - silver contacts

→ Flat

IQC3V2   Normally Open

Ø16.00 (.630SQUARE)

2.00 (.078)

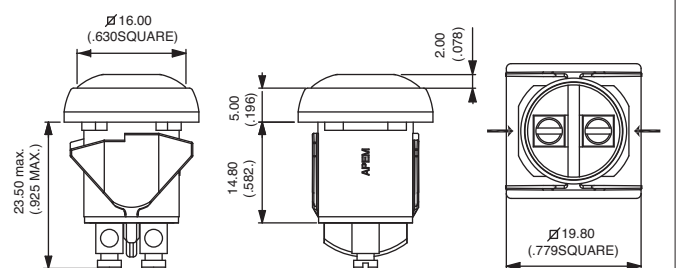5.00 (.196)

14.80 (.582.)

23.50 max. (.925 MAX.)

Ø19.80 (.779SQUARE)

Contact material, 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 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

ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load (gold plated contacts) :
  - Code 4 : 100mA 24VDC, 200.000 cycles
  - Code 7 : 4A 12VDC, 200.000 cycles
    1A 48VDC, 200.000 cycles
    3A 48VDC, 75.000 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	2,1V	2,5V
Blue (L0B)	20mA	3,2V	4V

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 : 2,5 mm (.098) +/- 0,3 mm
- Typical operating force : 5N +/- 2N
- Low level or 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
  (codes **4** and **7**)
- Multi-wire lead AWG20,
  section 0,6 mm²
- LED wire : AWG26,
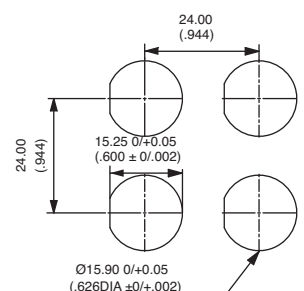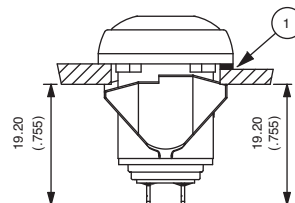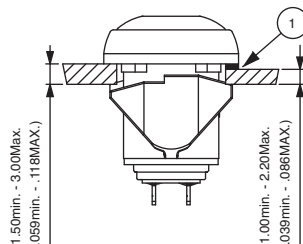 section 0,12 mm²
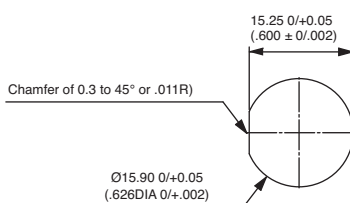- Lens : polycarbonate
- Terminal seal : epoxy

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)

15.25 0/+0.05
(.600 ± 0/.002)

24.00
(.944)

Ø15.90 0/+0.05
(.626DIA ±0/+.002)

MODEL STRUCTURE

| IQ | | | | |

SERIES

Actuator shape

C Square
R Round, curved
P Round, flat

Electrical function

1 OFF - ON

Terminals

S Solder lugs
F Flying leads
P Straight PC
Z Quick-connect

Contacts

4 & 7 Silver, gold plated

B1

OPTIONS

Actuator colour

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

Bushing & bezel finish

2 Black (standard)

Other : on request.

LED colour

Blank Non-illum.
L0S Super red
L0Y Yellow
L0G Green
L0B 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.

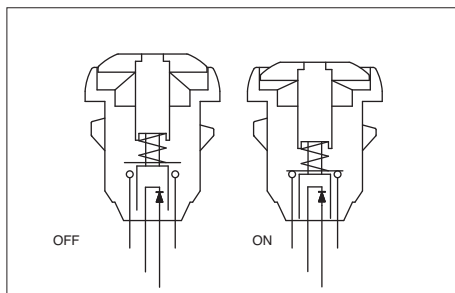**Mounting accessories** : Standard hardware supplied : 1 flat seal

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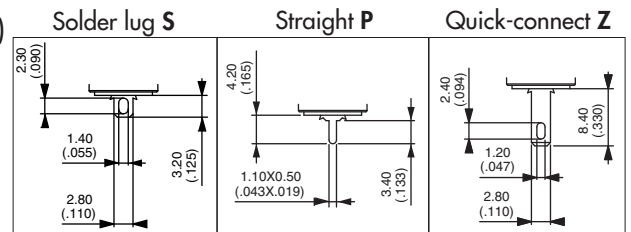
IQ series

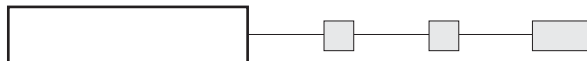## Sealed pushbutton switches - bushing Ø 16 mm - snap-in mounting - latching

Round - illuminated

- Four LED colours
- Tin plated LED terminals
- Gold plated contacts (4 or 7)
  See electrical specifications.
  For high current, replace 4
  with 7 in the P/Ns below.

OFF   ON

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

MODEL STRUCTURE

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

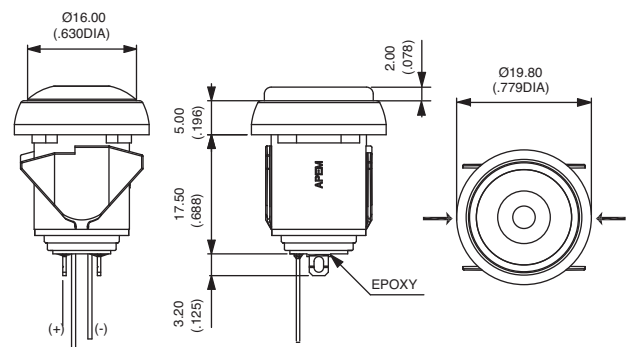
Solder lug terminals

→ Flat

Curved actuator
IQR1S4   OFF   -   ON

Flat actuator
IQP1S4   OFF   -   ON

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

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

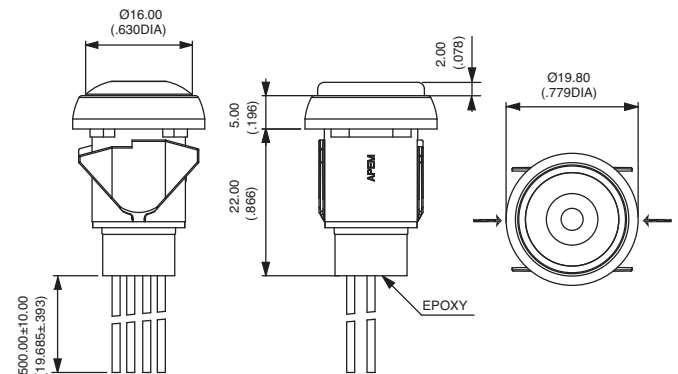
Sealed flying lead terminals

→ Flat

Curved actuator
IQR1F4   OFF   -   ON

Flat actuator
IQP1F4   OFF   -   ON

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

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

ACTUATOR COLOUR

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

BUSHING AND BEZEL FINISH

2 : black (standard)
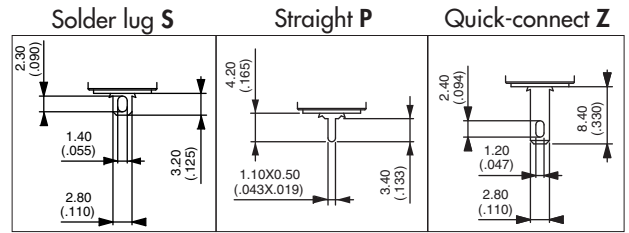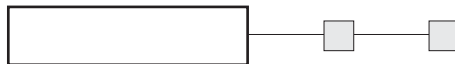
LED COLOUR

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

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- Gold plated contacts (4 or 7)
  See electrical specifications.
  For high current, replace 4
  with 7 in the P/Ns below.

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

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

MODEL STRUCTURE

Plunger marking available on IQP models (symbol 12 mm max.). On request.
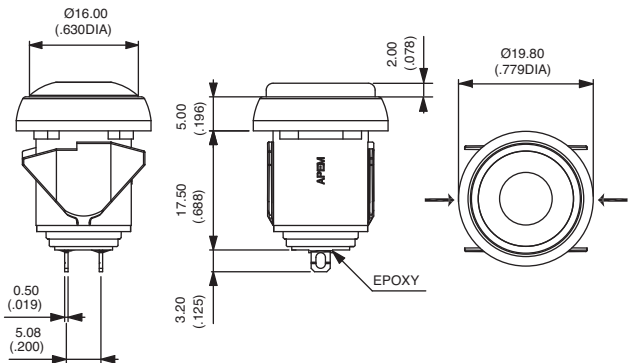
Solder lug terminals

→ Flat

Curved actuator
IQR1S4   OFF - ON

Flat actuator
IQP1S4   OFF - ON

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

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

Sealed flying lead terminals

→ Flat

Curved actuator
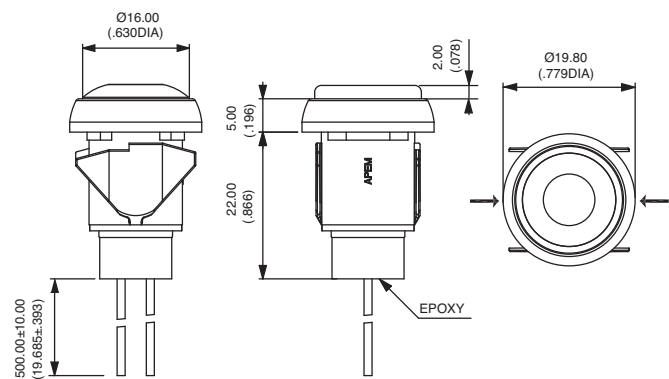**IQR1F4**   OFF - ON

Flat actuator
IQP1F4   OFF - ON

Ø16.00 (.630DIA) | 2.00 (.078) | 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 - **4** : grey - **5** : yellow - **6** : red - **7** : white - **9** : orange - **A** : satin chrome - **B** : dark blue
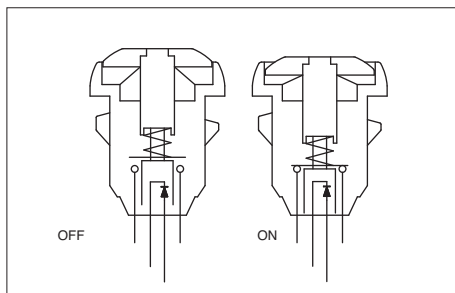
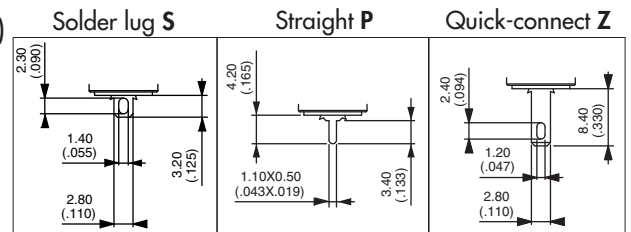## BUSHING AND BEZEL FINISH

2 : black (standard)

IQ series

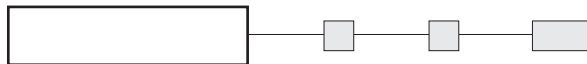## Sealed pushbutton switches - bushing Ø 16 mm - snap-in mounting - latching

Square - illuminated

- Four LED colours
- Tin plated LED terminals
- Gold plated contacts (4 or 7)
  See electrical specifications.
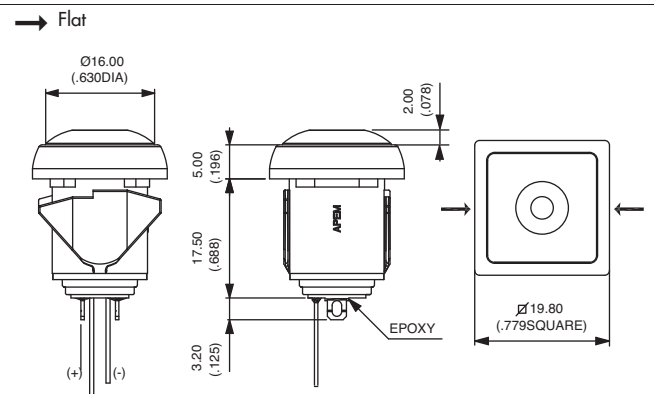 For high current, replace 4
  with 7 in the P/Ns below.

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

OFF   **ON**

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)

(+) (−)

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)

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

ACTUATOR COLOUR

1 : blue - **2** : black - **3** : green - **4** : grey - **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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IQ series
Sealed pushbutton switches - bushing Ø 16 mm - snap-in mounting - latching
Square - non-illuminated

OFF   ON

• Gold plated contacts (4 or 7)
  See electrical specifications.
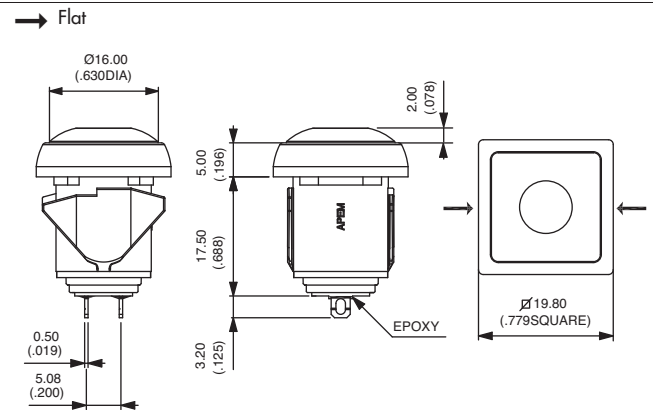 For high current, replace 4
  with 7 in the P/Ns below.

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

2.30 (.090)
1.40 (.055)
2.80 (.110)
3.20 (.125)

4.20 (.165)
1.10X0.50 (.043X.019)
3.40 (.133)

2.40 (.094)
1.20 (.047)
2.80 (.110)
8.40 (.330)

MODEL STRUCTURE

B1

Solder lug terminals

→ Flat

Curved actuator
IQC1S4   OFF   -   ON

Ø16.00 (.630DIA)
5.00 (.196)
17.50 (.688)
0.50 (.019)
5.08 (.200)
3.20 (.125)
2.00 (.078)
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)
5.00 (.196)
22.00 (.866)
500.00±10.00 (19.685±.393)
2.00 (.078)
EPOXY
Ø19.80 (.779SQUARE)

ACTUATOR COLOUR

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

BUSHING AND BEZEL FINISH

2 : black (standard)

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

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  [IQR1S422](#) [IQC3S422](#) [IQP3F422](#) [IQP3V222](#) [IQP3P422](#) [IQP3Z422](#) [IQP3S422](#) [IQR3Z422](#) [IQR3F422](#) [IQR3V222](#) [IQC3P422](#) [IQC3Z422](#) [IQR3S422](#) [IQC3F422](#) [IQC3V222](#)