

IR series

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



DISTINCTIVE FEATURES

- Screw version up to 4 A
- 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 (-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 mΩ max.
- Insulation resistance : 1 GΩ min. at 500 VDC
- Dielectric strength : 1,500 Vrms



LED COMPONENT SPECIFICATIONS

LED color	Forward current	Typ. forward voltage	Max. forward voltage
Super red (0S)	20 mA	2.1 V	2.3 V
Yellow (0Y)	20 mA	2.1 V	2.3 V
Green (0G)	20 mA	2.1 V	2.3 V
Blue (0B)	20 mA	3.2 V	3.8 V
White (0W)	20 mA	3.35 V	4.25 V
Red/Green (SG)	20 mA	Red: 1.95 V / green: 2.1 V	2.5 V
Yellow/green (YG)	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.

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momentary • standard version



GENERAL SPECIFICATIONS

- Panel thickness : 8 mm (.314) 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
- Torque : 0.8 Nm max. applied to nut
- Soldering : 320 °C (608 °F) max. for 3 sec.



MATERIALS

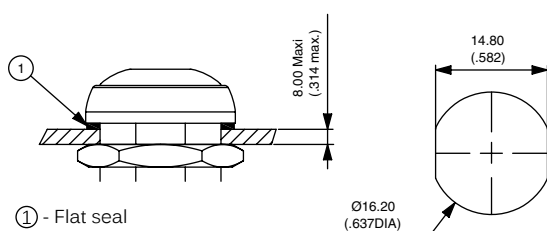
- Case : thermoplastic UL94-V0
- Actuator : polyamide 6/6
- Bushing/bezel : polyamide 6/6
- Contacts : 4 and 7 : silver, gold plated
2 : silver (screw terminals)
- Multi-wire lead AWG20, section 0.6 mm²
- LED wire : AWG26, section 0.12 mm²
- Lens : polycarbonate
- Terminal seal : epoxy

APEM products may be recycled at end-of-life for the re-claiming of valuable metal components.

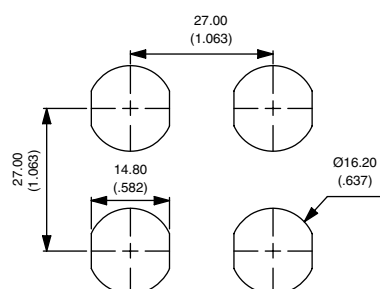


MOUNTING

PANEL CUT-OUT



MATRIX MOUNTING

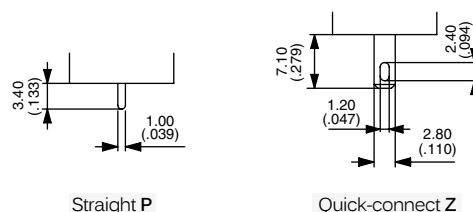


TERMINALS

ILLUMINATED MODELS

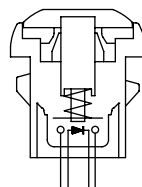


NON-ILLUMINATED MODELS



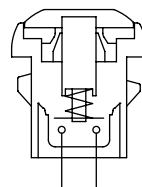
ELECTRICAL FUNCTIONS

ILLUMINATED MODELS



Function 3 (NO)

NON-ILLUMINATED MODELS

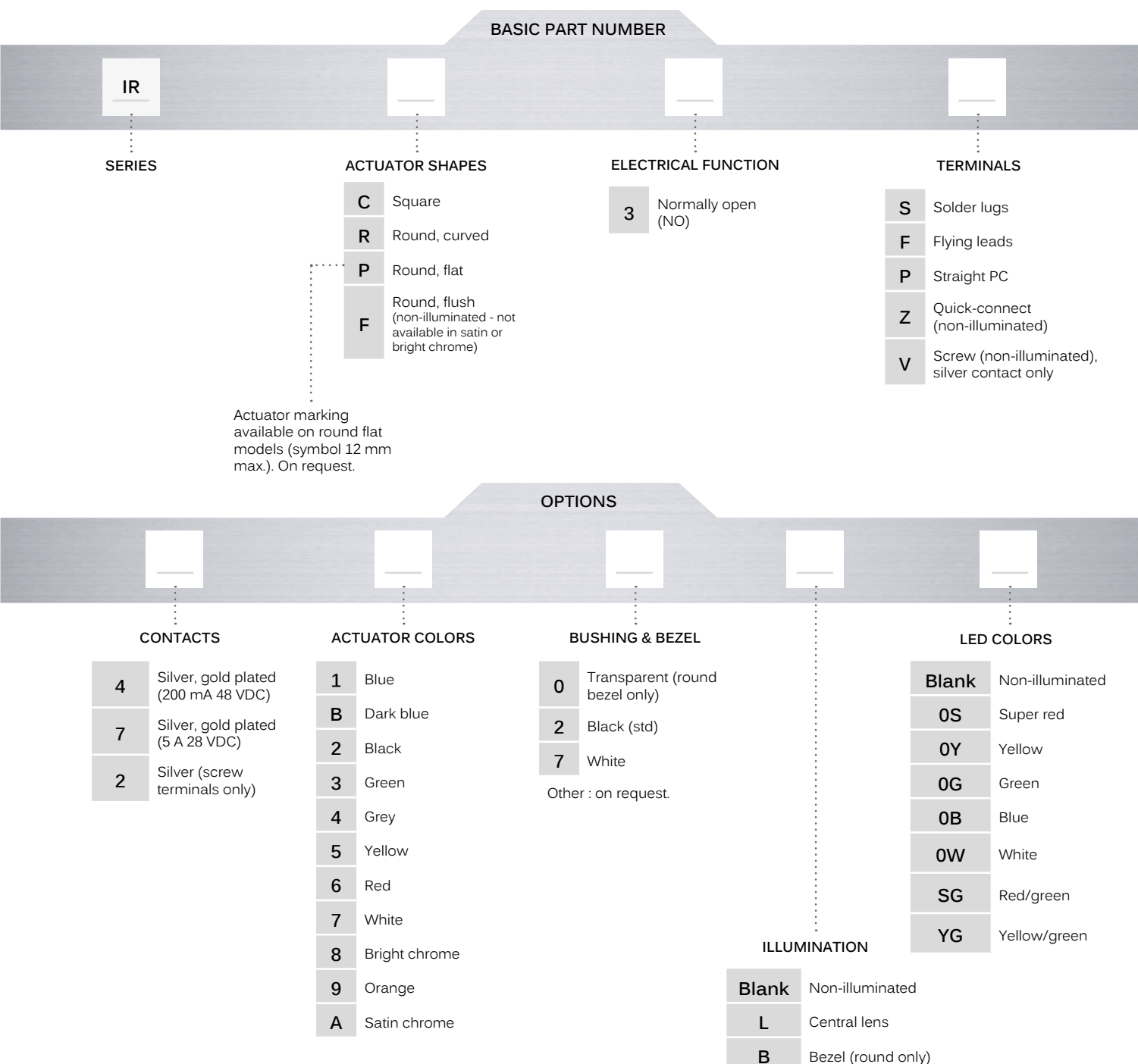


Function 3 (NO)

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



BUILD YOUR PART NUMBER



ABOUT THIS SERIES

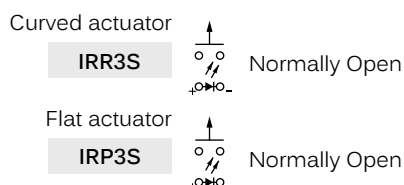
On the following pages, you will find successively basic part numbers of switches and options in the same order as in above chart.

- Notice** : please note that not all combinations of above numbers are available. Refer to the following pages for further information.
- A sealing boot** is available to protect the switches against frost and sand (P/N U7125). Round models only.
See "Sealing Boot" section of website.
- Mounting accessories** : Standard hardware supplied : 1 hex nut 19 mm (.748) across flats and 1 flat seal. Hex nut P/N U6715.

IR series

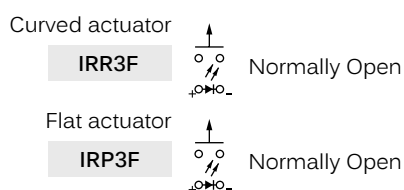
Sealed pushbutton switches • bushing Ø 16 mm • momentary • standard version

ROUND - ILLUMINATED SOLDER LUG TERMINALS



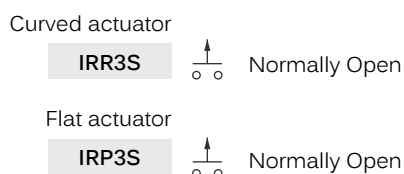
Also available with straight PC terminals : **IR•3P**.
LED color is indicated by the bottom of the switch.

ROUND - ILLUMINATED FLYING LEAD TERMINALS



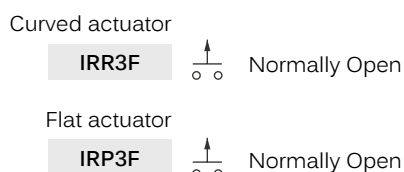
Wire colors : black : NO contact, red : LED anode (+), blue : LED cathode (-)

ROUND - NON-ILLUMINATED SOLDER LUG TERMINALS

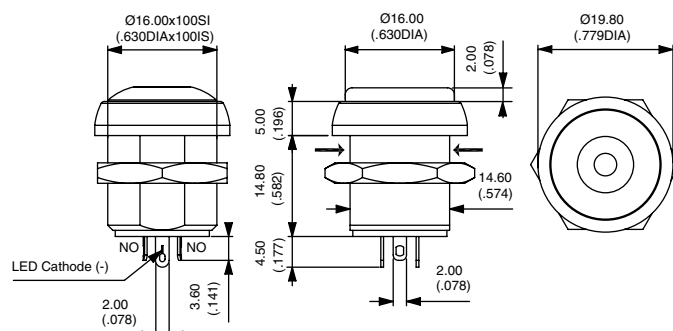


Also available with straight PC terminals : **IR•3P**
and quick-connect terminals : **IR•3Z**.

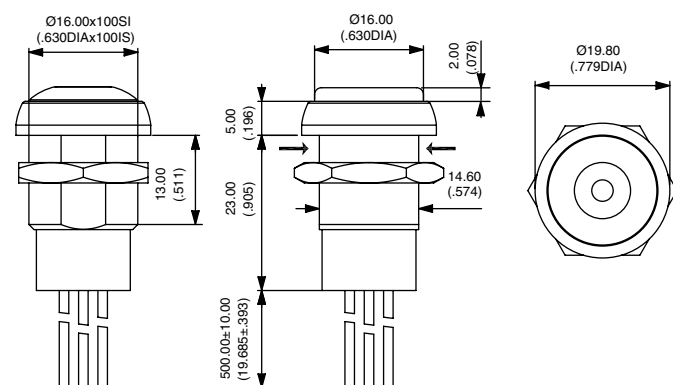
ROUND - NON-ILLUMINATED FLYING LEAD TERMINALS



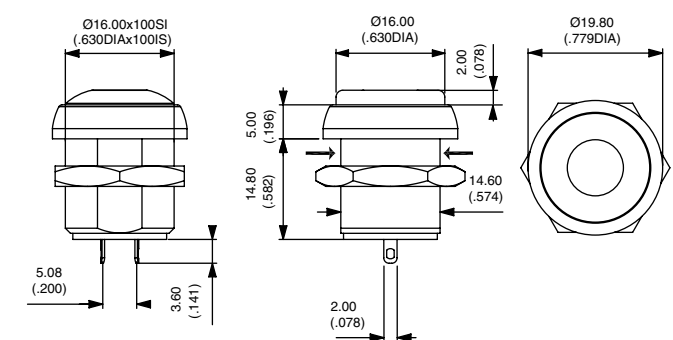
→ FLAT



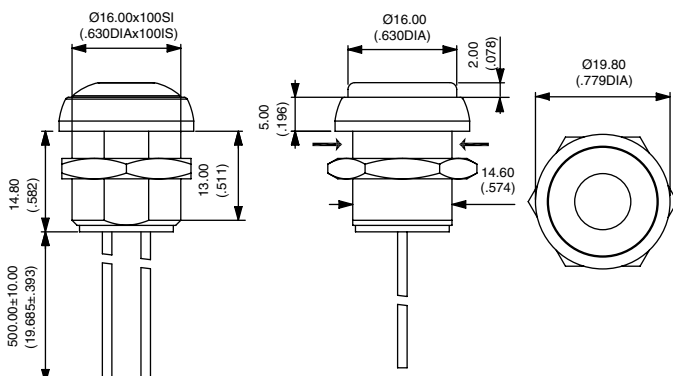
→ FLAT



→ FLAT



→ FLAT



IR series

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ROUND - NON-ILLUMINATED SCREW TERMINALS



Curved actuator

IRR3V



Normally Open

Flat actuator

IRP3V



Normally Open

SQUARE - ILLUMINATED SOLDER LUG TERMINALS



IRC3S



Normally Open

Also available with straight PC terminals : **IRC3P**.
LED color is indicated by the bottom of the switch.

SQUARE - ILLUMINATED FLYING LEAD TERMINALS



IRC3F



Normally Open

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

SQUARE - NON-ILLUMINATED SOLDER LUG TERMINALS



IRC3S



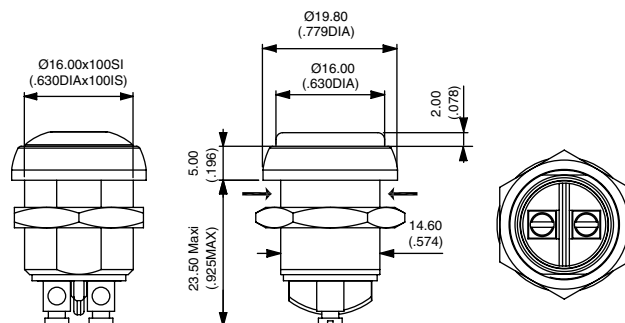
Normally Open

Also available with straight PC terminals : **IRC3P**
and quick-connect terminals : **IRC3Z**.

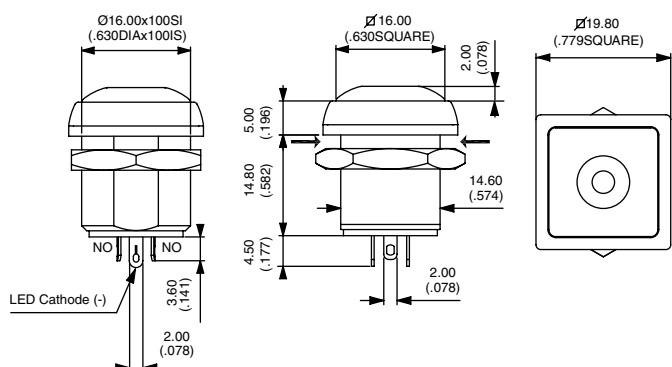
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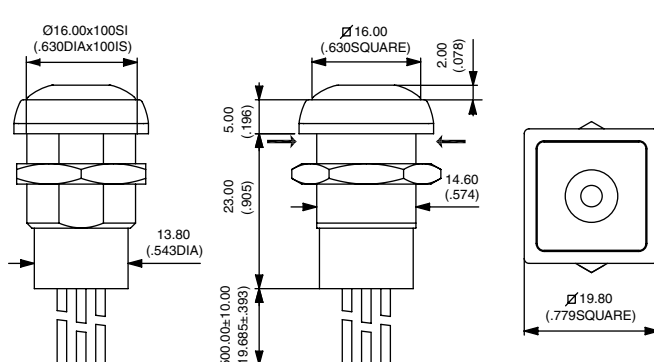
→ FLAT



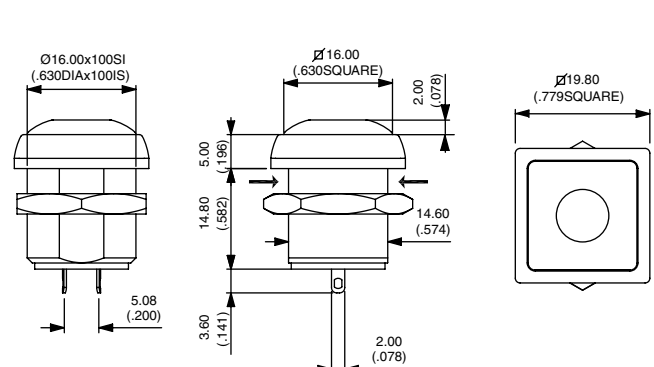
→ FLAT



→ FLAT



→ FLAT



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SQUARE - NON-ILLUMINATED FLYING LEAD TERMINALS

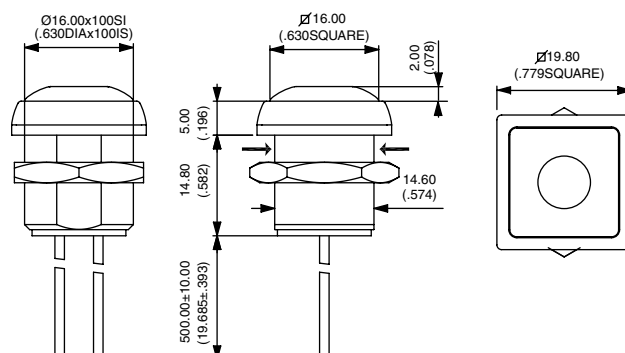


IRC3F



Normally Open

→ FLAT



SQUARE - NON-ILLUMINATED SCREW TERMINALS

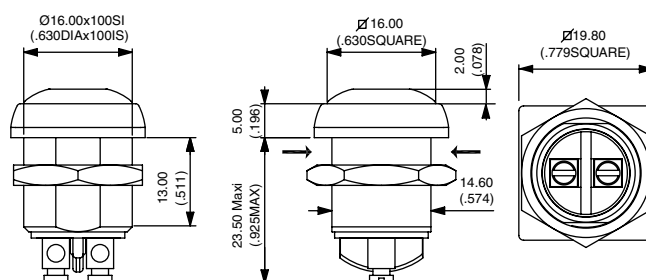


IRC3V



Normally Open

→ FLAT



CONTACTS

BASIC P/N

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

ACTUATOR COLORS

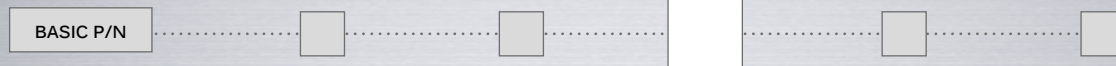
BASIC P/N

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

IR series

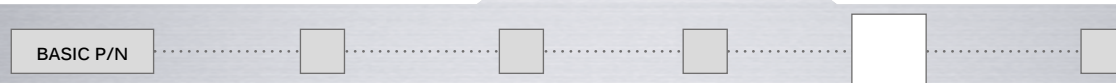
Sealed pushbutton switches • bushing Ø 16 mm •
momentary • standard version

BUSHING AND BEZEL



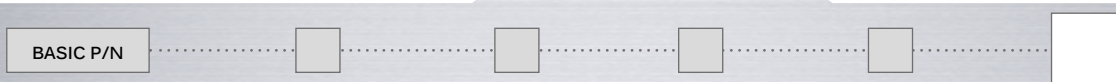
- 2 Black (standard)
- 7 White
- 0 Transparent (round bezel only)

ILLUMINATION



- L Central lens
- B Bezel (round only)

LED COLORS



- 0S Super red
- 0Y Yellow
- 0G Green
- 0B Blue
- 0W White
- SG Red/green
- YG Yellow/green

IR series

Sealed pushbutton switches •
bushing Ø 16 mm • latching



DISTINCTIVE FEATURES

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 (-40 °F to +185 °F)



ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load (gold plated contacts) :
 - Code 4 : 100 mA 24V DC, 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 mΩ max.
- Insulation resistance : 1 GΩ min. at 500 VDC
- Dielectric strength : 1,500 Vrms between terminals



LED COMPONENT SPECIFICATIONS

LED color	Forward current	Typ. forward voltage	Max. forward voltage	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.
Super red (0S)	20 mA	1.95 V	1.95 V	
Yellow (0Y)	20 mA	2 V	2.05 V	
Green (0G)	20 mA	2.1 V	2.5 V	
Blue (0B)	20 mA	3.2 V	4 V	

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IR series

Sealed pushbutton switches •
bushing Ø 16 mm • latching



GENERAL SPECIFICATIONS

- Panel thickness : 8 mm (.314) 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
- Torque : 0.8 Nm max. applied to nut
- Soldering : 320 °C (608 °F) max. for 3 sec.



MATERIALS

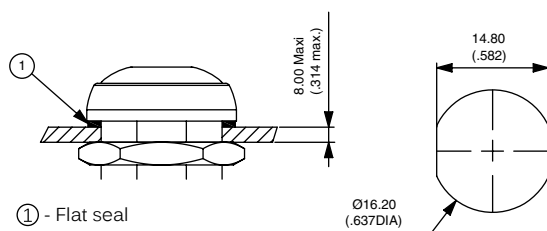
- Case : thermoplastic UL94-V0
- Plunger : polyamide
- Bushing/bezel : polyamide
- Contacts : silver, gold plated (codes 4 and 7)
- Multi-wire leads AWG20, section 0.6 mm²
- LED wire : AWG26, section 0.12 mm²
- Lens : polycarbonate
- Terminal seal : epoxy

APEM products may be recycled at end-of-life for the re-claiming of valuable metal components.

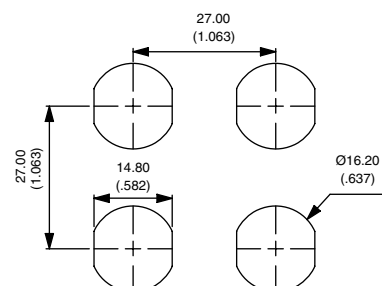


MOUNTING

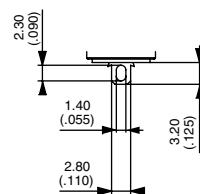
PANEL CUT-OUT



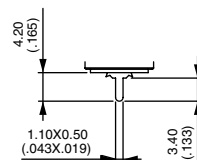
MATRIX MOUNTING



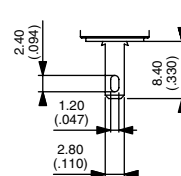
TERMINALS



Solder lug S



Straight P

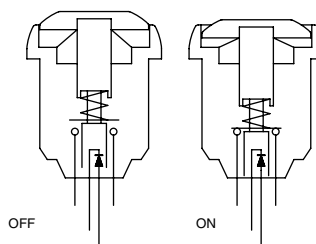


Quick-connect Z

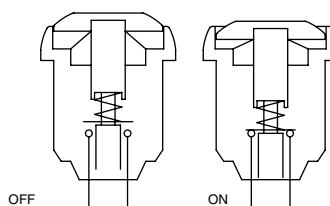


ELECTRICAL FUNCTIONS

ILLUMINATED MODELS



NON-ILLUMINATED MODELS

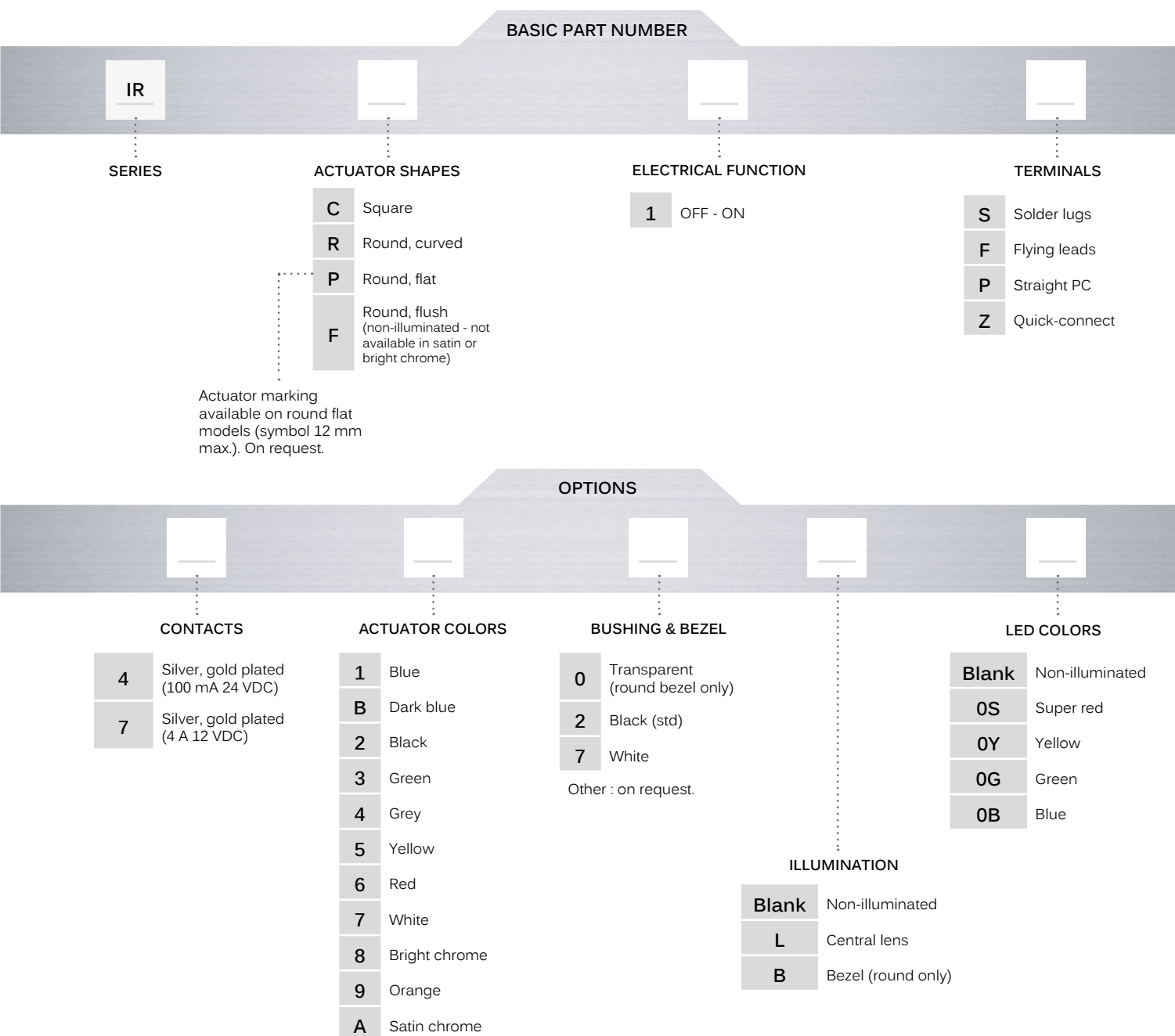


IR series

Sealed pushbutton switches •
bushing Ø 16 mm • 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.
- A sealing boot** is available to protect the switches against frost and sand (P/N U7125). Round models only. See "Sealing Boots" section of website.
- Mounting accessories** : Standard hardware supplied : 1 hex nut 19 mm (.748) across flats and 1 flat seal. Hex nut P/N U6715.

IR series

Sealed pushbutton switches •
bushing Ø 16 mm • latching

ROUND - ILLUMINATED SOLDER LUG TERMINALS



Curved actuator

IRR1S

OFF - ON

Flat actuator

IRP1S

OFF - ON

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

ROUND - ILLUMINATED FLYING LEAD TERMINALS



Curved actuator

IRR1F

OFF - ON

Flat actuator

IRP1F

OFF - ON

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

ROUND - NON-ILLUMINATED SOLDER LUG TERMINALS



Curved actuator

IRR1S

OFF - ON

Flat actuator

IRP1S

OFF - ON

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

ROUND - NON-ILLUMINATED FLYING LEAD TERMINALS



Curved actuator

IRR1F

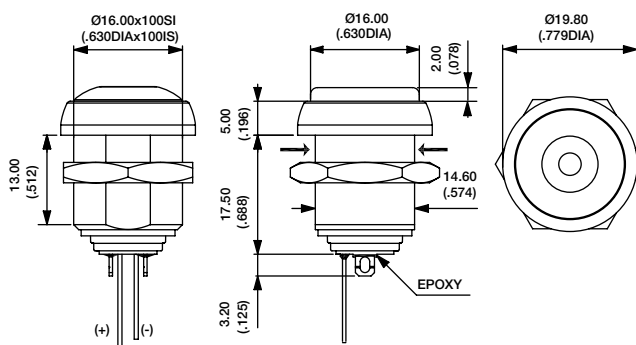
OFF - ON

Flat actuator

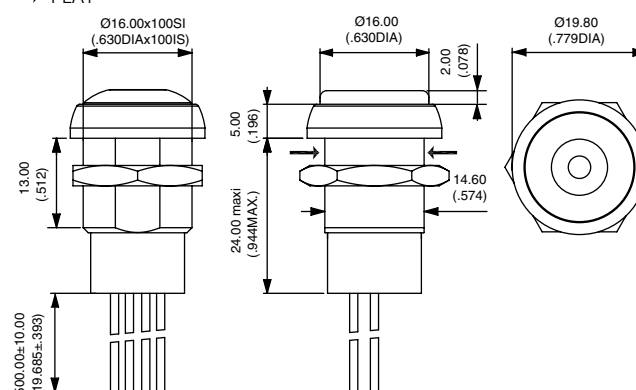
IRP1F

OFF - ON

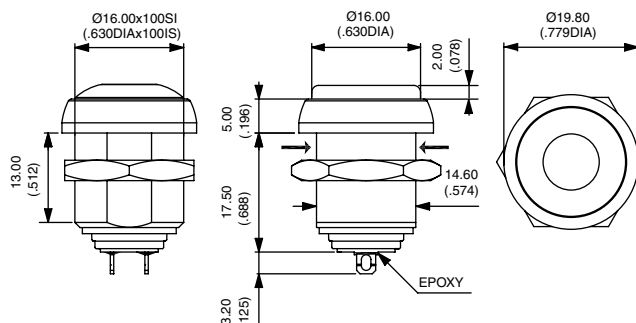
→ FLAT



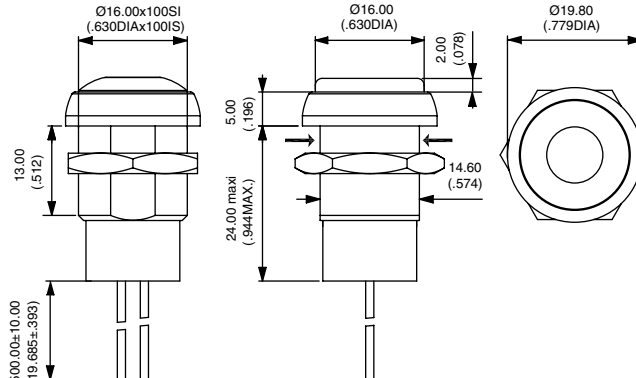
→ FLAT



→ FLAT



→ FLAT



IR series

Sealed pushbutton switches •
bushing Ø 16 mm • latching

SQUARE - ILLUMINATED SOLDER LUG TERMINALS



Curved actuator

IRC1S

OFF - ON

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

SQUARE - ILLUMINATED FLYING LEAD TERMINALS



Curved actuator

IRC1F

OFF - ON

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

SQUARE - NON-ILLUMINATED SOLDER LUG TERMINALS



Curved actuator

IRC1S

OFF - ON

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

SQUARE - NON-ILLUMINATED FLYING LEAD TERMINALS

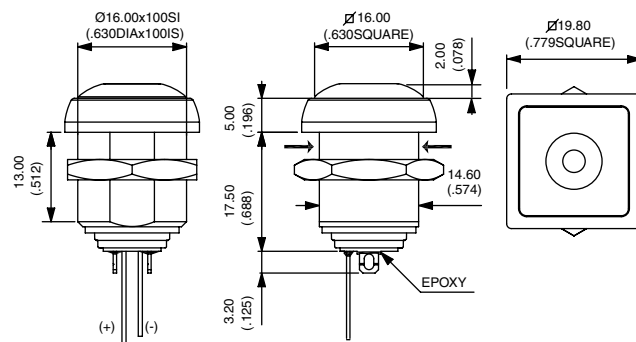


Curved actuator

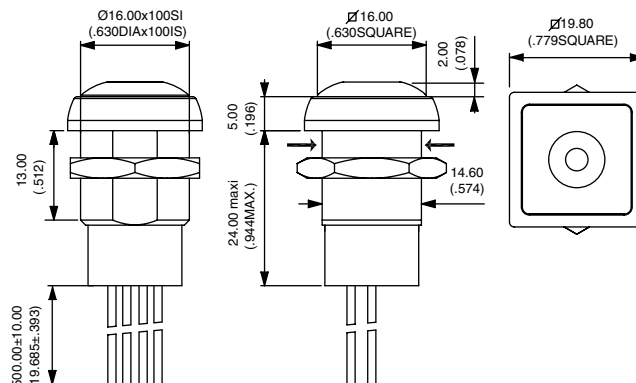
IRC1F

OFF - ON

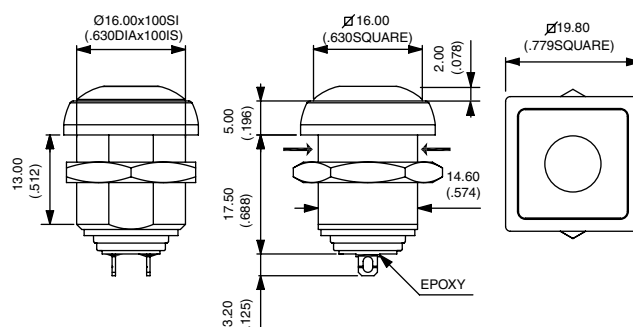
→ FLAT



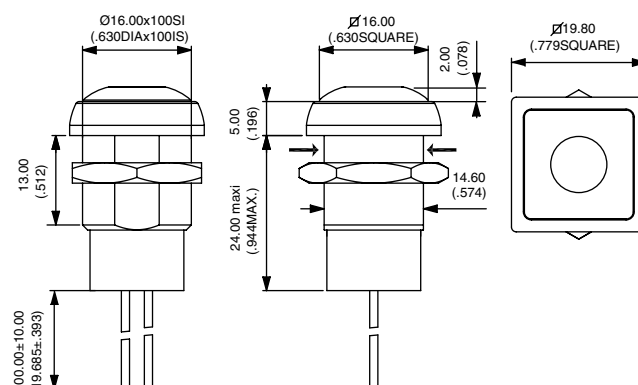
→ FLAT



→ FLAT



→ FLAT



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ACTUATOR COLORS



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

BUSHING AND BEZEL



- 0 Transparent (round bezel only)
- 2 Black (standard)
- 7 White

ILLUMINATION



- Blank Non-illuminated
- L Central lens
- B Bezel (round only)

LED COLORS



- Blank Non-illuminated
- 05 Super red
- 0Y Yellow
- 0G Green
- 0B Blue

IR series

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



DISTINCTIVE FEATURES

Microswitch technology up to 5 A

Tactile feedback

Sealed to IP67

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 (-4 °F to +185 °F)



GENERAL SPECIFICATIONS

- Panel thickness : 3 mm (.118) max.
- Total travel : 1.6 mm (.062) ± 0.3 mm
- Typical operating force : 4 N ± 2 N
- Mechanical life : 1,000,000 cycles
- Torque : 0.8 Nm max. applied to nut
- Soldering : 320 °C (608 °F) max. for 3 sec.



ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load (microswitch) :
5 A 250 VAC, 50,000 cycles (function 7)
5 A 250 VAC, 25,000 cycles (function 8)
- Initial contact resistance : 100 mΩ max.
- Insulation resistance : 1 GΩ min. at 500 VDC
- Dielectric strength : 750 Vrms between terminals
2,000 Vrms between terminals and frame

The company reserves the right to change specifications without notice.



IR series

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momentary • microswitch version



MATERIALS

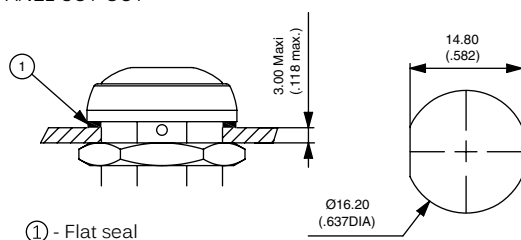
- Case : thermoplastic UL94-V0
- Actuator : polyamide 6/6
- Bushing/bezel : polyamide 6/6
- Contacts : silver

APEM products may be recycled at end-of-life for the re-claiming of valuable metal components.

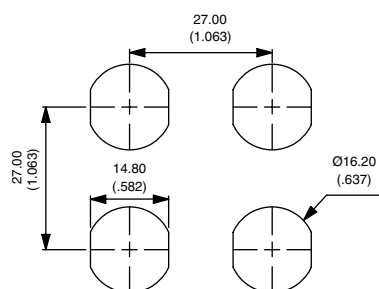


MOUNTING

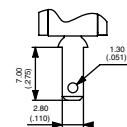
PANEL CUT-OUT



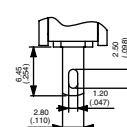
MATRIX MOUNTING



TERMINALS



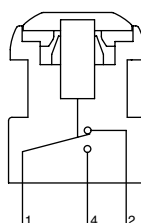
Quick-connect
Function 7 (NC+NO))



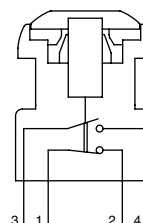
Solder lug
Function 8 (NC/NO))



ELECTRICAL FUNCTIONS



Function 7 (NC+NO))



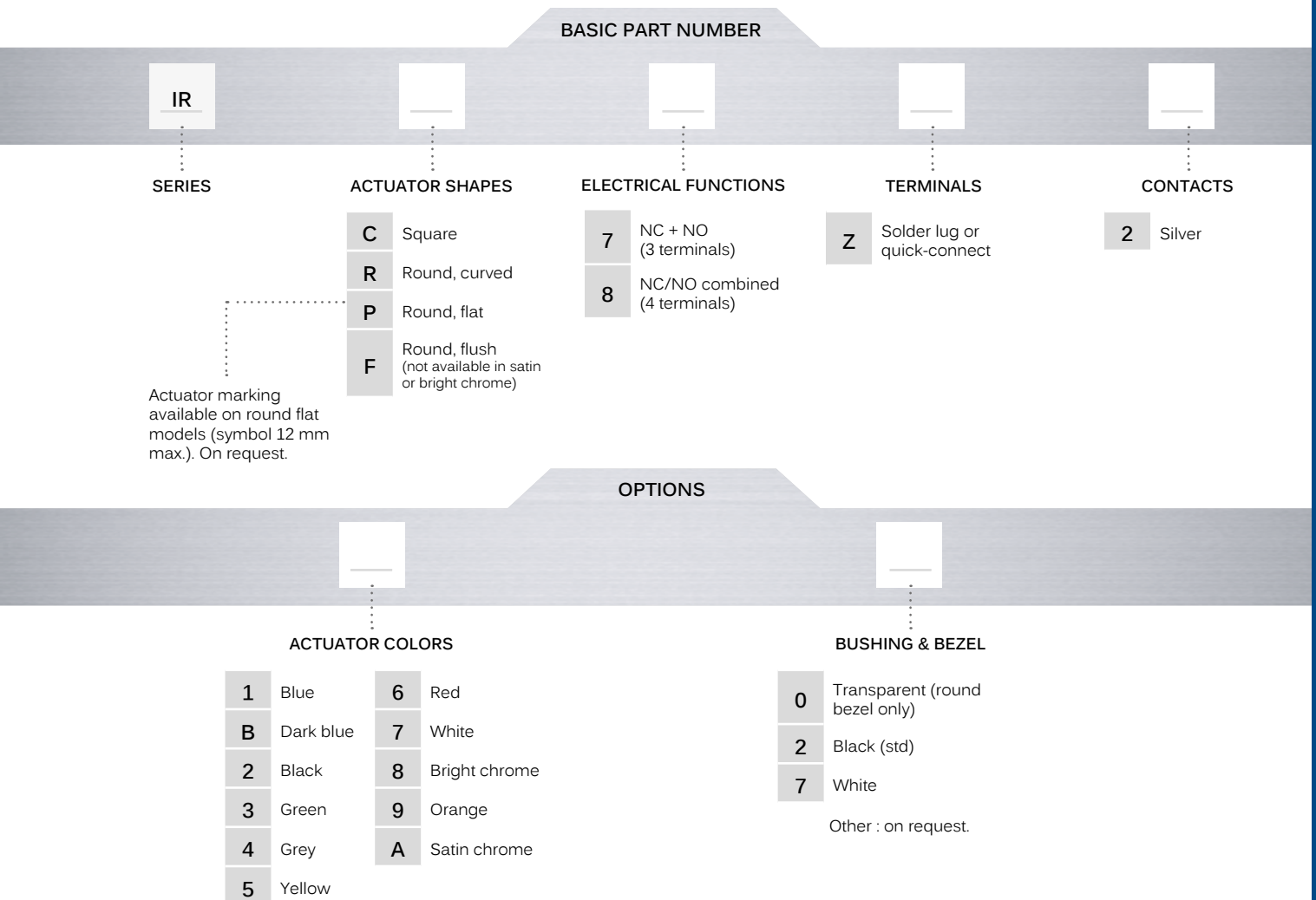
Function 8 (NC/NO))

IR series

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



BUILD YOUR PART NUMBER



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 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.
- A sealing boot** is available to protect the switches against frost and sand (P/N U7125). Round models only.
See "Sealing Boots" section of website.
- Mounting accessories** : Standard hardware supplied : 1 hex nut 19 mm (.748) across flats and 1 flat seal. Hex nut P/N : U6715.

IR series

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

ROUND - QUICK-CONNECT TERMINALS - NC+NO - 3 TERMINALS



Curved actuator
IRR7Z2  NC+NO

Flat actuator
IRP7Z2  NC+NO

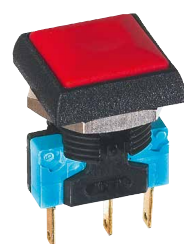
ROUND - SOLDER LUG TERMINALS - NC/NO - 4 TERMINALS



Curved actuator
IRR8Z2  NC/NO combined

Flat actuator
IRP8Z2  NC/NO combined

SQUARE - QUICK-CONNECT TERMINALS - NC+NO - 3 TERMINALS



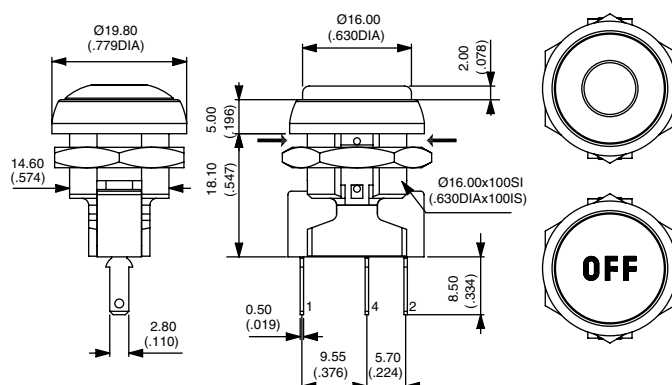
IRC7Z2  NC+NO

SQUARE - SOLDER LUG TERMINALS - NC/NO - 4 TERMINALS

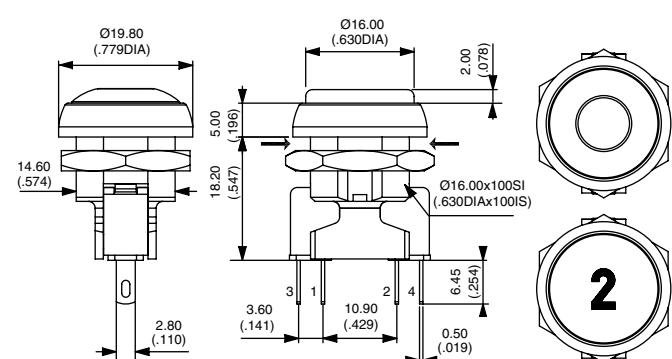


IRC8Z2  NC+NO

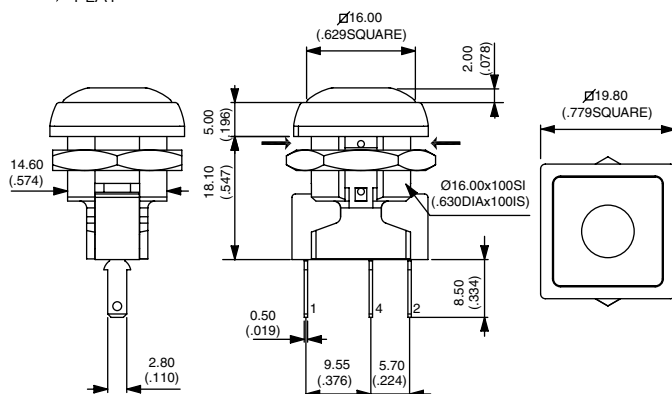
→ FLAT



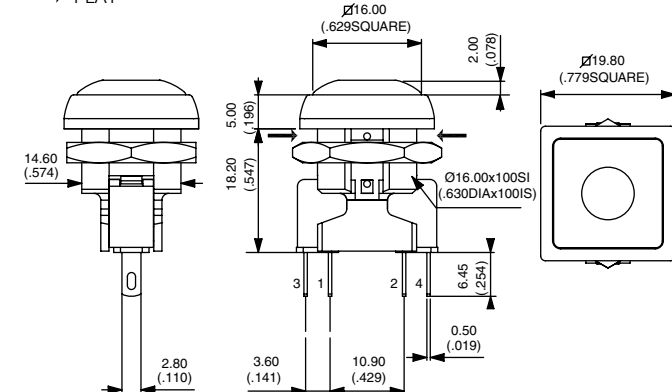
→ FLAT



→ FLAT



→ FLAT



Terminals should be used as solder lugs only.

IR series

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

ACTUATOR COLORS

BASIC P/N



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

* Non available with Round, flush actuator shape (F)

BUSHING AND BEZEL

BASIC P/N



- 0 Transparent (round bezel only)
- 2 Black (standard)
- 7 White