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

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

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

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

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

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

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

Distinctive features and specifications

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

ENVIRONMENTAL SPECIFICATIONS

- Front panel sealing : IP67 according to IEC 60529
- Shock resistance : 100 g according to IEC 512-4, test 6c
- Vibration resistance : 10-500Hz - 10 g according to IEC 512-4, test 6d
- Salt spray : IEC 512-6, test 11f
- Operating temperature : -40°C to +85°C

ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load :
  - Gold plated silver contacts (code 4) : 200mA 48VDC - 200mA 250VAC
  - Silver contacts (code 2) - screw terminals : 2A 250VAC - 4A 48VDC
- Electrical life at full load : 500,000 cycles
- Initial contact resistance : 100 mΩ max.
- Insulation resistance : 1 GΩ min. at 500VDC
- Dielectric strength : 1,500 Vrms

LED COMPONENT SPECIFICATIONS

<table>
<thead>
<tr>
<th>LED colour</th>
<th>Forward current</th>
<th>Typ. forward voltage</th>
<th>Max. forward voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Super red (L0S)</td>
<td>20mA</td>
<td>2,1V</td>
<td>2,3V</td>
</tr>
<tr>
<td>Yellow (L0Y)</td>
<td>20mA</td>
<td>2,1V</td>
<td>2,3V</td>
</tr>
<tr>
<td>Green (L0G)</td>
<td>20mA</td>
<td>2,1V</td>
<td>2,3V</td>
</tr>
<tr>
<td>Blue (L0B)</td>
<td>20mA</td>
<td>3,2V</td>
<td>3,8V</td>
</tr>
<tr>
<td>White (L0W)</td>
<td>20mA</td>
<td>3,35V</td>
<td>4,25V</td>
</tr>
</tbody>
</table>

A resistor must be series-connected by the user.
Resistor value = supply voltage - LED forward voltage
LED forward current
On flying lead versions, the LED resistor can be integrated by APEM on request.

GENERAL SPECIFICATIONS

- Panel thickness : 8 mm (.314) max.
- Total travel : 1,6 mm (.062) +/- 0,3 mm
- Typical operating force : 4N +/- 2N
- Mechanical life : 1,000,000 cycles
- Torque : 0,8 Nm max. applied to nut
- Soldering : 320°C max. for 3 sec.

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

PANEL CUT-OUT

![Panel cut-out diagram](image)
**IR series**

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

**Overview**

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

**Actuator colour**

- 1 Blue
- 2 Black
- 3 Green
- 5 Yellow
- 6 Red
- 7 White
- 9 Orange
- Other : on request.

**Bushing & bezel finish**

- 2 Black (std)
- 7 White
- Other : on request.

**LED colour**

- Blank Non-illumin.
- LOS Super red
- LOY Yellow
- LOG Green
- LOB Blue
- LOW White

**ABOUT THIS SERIES**

On the following pages, you will find successively:
model structure of switches and options in the same order as in above chart.

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

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

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

IR series
Sealed pushbutton switches - bushing Ø 16 mm - momentary - standard version
Round - illuminated

Function 3 (NO)

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

MODEL STRUCTURE

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

Solder lug terminals

Curved actuator
IRR3S4
Normally Open

Flat actuator
IRP3S4
Normally Open

Also available with straight PC terminals: IR•3P4.

LED colour is indicated by the bottom of the switch.

Sealed flying lead terminals

Curved actuator
IRR3F4
Normally Open

Flat actuator
IRP3F4
Normally Open

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

ACTUATOR COLOUR


BUSHING AND BEZEL FINISH

2: black (standard) - 7: white

LED COLOUR

LOS: super red - LOY: yellow - LOG: green - LOB: blue - L0W: white
IR series
Sealed pushbutton switches - bushing Ø 16 mm - momentary - standard version
Round - non-illuminated

Function 3 (NO)

New!

Solder lug terminals - gold plated contacts

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

Sealed flying lead terminals - gold plated contacts

Screw terminals - silver contacts

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

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

Square - illuminated

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

MODEL STRUCTURE

Solder lug terminals

IRC3S4

Normally Open

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

Sealed flying lead terminals

IRC3F4

Normally Open

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

ACTUATOR COLOUR


BUSHING AND BEZEL FINISH

2 : black (standard)  7 : white

LED COLOUR

LO5 : super red  LOY : yellow  LOG : green  LOB : blue  L0W : white
IR series
Sealed pushbutton switches - bushing Ø 16 mm - momentary - standard version
Square - non-illuminated

MODEL STRUCTURE

Solder lug terminals - gold plated contacts
IRC3S4  Normally Open

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

Sealed flying lead terminals - gold plated contacts
IRC3F4  Normally Open

Screw terminals - silver contacts
IRC3V2  Normally Open

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

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

Distinctive features and specifications

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

**ENVIRONMENTAL SPECIFICATIONS**

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

**ELECTRICAL SPECIFICATIONS**

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

**LED COMPONENT SPECIFICATIONS**

<table>
<thead>
<tr>
<th>LED colour</th>
<th>Forward current</th>
<th>Typ. forward voltage</th>
<th>Max. forward voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Super red  (L0S)</td>
<td>20mA</td>
<td>2V</td>
<td>2,5V</td>
</tr>
<tr>
<td>Yellow (L0Y)</td>
<td>20mA</td>
<td>2V</td>
<td>2,5V</td>
</tr>
<tr>
<td>Green (L0G)</td>
<td>10mA</td>
<td>2V</td>
<td>2,5V</td>
</tr>
<tr>
<td>Blue (L0B)</td>
<td>10mA</td>
<td>3,3V</td>
<td>3,8V</td>
</tr>
</tbody>
</table>

A resistor must be series-connected by the user.
Resistor value = supply voltage - LED forward voltage
LED forward current

**GENERAL SPECIFICATIONS**

- Panel thickness: 3 mm (.118) max.
- Total travel: 1,6 mm (.062) +/- 0.3 mm
- Typical operating force: 4N +/-2N
- Mechanical life: 1,000,000 cycles
- Torque: 0,8 Nm max. applied to nut
- Soldering: 320°C max. for 3 sec.

**MATERIALS**

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

**PANEL CUT-OUT**

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

**ABOUT THIS SERIES**
On the following pages, you will find successively:
model structure of switches and options in the same order as in above chart

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

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

**Packaging unit**: 25 pieces for flying lead models - 40 pieces for other models
New!
IR series
Sealed pushbutton switches - bushing Ø 16 mm - momentary - microswitch version
Round - illuminated

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

MODEL STRUCTURE

Quick-connect terminals - NC+NO - 3 terminals
Curved actuator IRR7Z2
Flat actuator IRP7Z2

Solder lug terminals - NC/NO - 4 terminals
Curved actuator IRR8Z2
Flat actuator IRP8Z2

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

Terminals should be used as solder lugs only.

ACTUATOR COLOUR

BUSHING AND BEZEL FINISH
2 : black (standard) - 7 : white

LED COLOUR
L0S : super red - LOY : yellow - L0G : green - LOB : blue
IR series
Sealed pushbutton switches - bushing Ø 16 mm - momentary - microswitch version
Round - non-illuminated

• Silver contacts

MODEL STRUCTURE

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

Quick-connect terminals - NC+NO - 3 terminals

Curved actuator IR7Z2

Flat actuator IRP7Z2

Solder lug terminals - NC/NO - 4 terminals

Curved actuator IR8Z2

Flat actuator IRP8Z2

Terminals should be used as solder lugs only.

ACTUATOR COLOUR

<table>
<thead>
<tr>
<th>Colour</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>blue</td>
<td>1</td>
</tr>
<tr>
<td>B (dark blue)</td>
<td>2</td>
</tr>
<tr>
<td>black</td>
<td>3</td>
</tr>
<tr>
<td>green</td>
<td>5</td>
</tr>
<tr>
<td>yellow</td>
<td>6</td>
</tr>
<tr>
<td>red</td>
<td>7</td>
</tr>
<tr>
<td>white</td>
<td>9</td>
</tr>
</tbody>
</table>

BUSHING AND BEZEL FINISH

<table>
<thead>
<tr>
<th>Finish</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>black (standard)</td>
<td>2</td>
</tr>
<tr>
<td>white</td>
<td>7</td>
</tr>
</tbody>
</table>
New!
IR series
Sealed pushbutton switches - bushing Ø 16 mm - momentary - microswitch version
Square - illuminated

- Four LED colours
- Tin plated LED terminals
- Silvercontacts

**MODEL STRUCTURE**

Quick-connect terminals - NC+NO - 3 terminals
IRC7Z2

![Quick-connect terminals - NC+NO - 3 terminals](image)

Solder lug terminals - NC/NO - 4 terminals
IRC8Z2

![Solder lug terminals - NC/NO - 4 terminals](image)

**ACTUATOR COLOUR**


**BUSHING AND BEZEL FINISH**

2 : black (standard) - 7 : white

**LED COLOUR**

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

**BUSHING AND BEZEL FINISH**

2 : black (standard) - 7 : white
IR series
Sealed pushbutton switches - bushing Ø 16 mm - momentary - microswitch version
Square - non-illuminated

• Silver contacts

Quick-connect terminals - NC+NO - 3 terminals
IRC7Z2 NC+NO

Solder lug terminals - NC/NO - 4 terminals
IRC8Z2 NC/NO combined

Terminals should be used as solder lugs only.

ACTUATOR COLOUR

BUSHING AND BEZEL FINISH
2: black (standard) - 7: white
New!

IR series
Sealed pushbutton switches - bushing Ø 16 mm - latching
Distinctive features and specifications

- 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

**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**

<table>
<thead>
<tr>
<th>LED colour</th>
<th>Forward current</th>
<th>Typ. forward voltage</th>
<th>Max. forward voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Super red (LOs)</td>
<td>20mA</td>
<td>1,95V</td>
<td>1,95V</td>
</tr>
<tr>
<td>Yellow (LOY)</td>
<td>20mA</td>
<td>2V</td>
<td>2,05V</td>
</tr>
<tr>
<td>Green (LOG)</td>
<td>20mA</td>
<td>3,2V</td>
<td>3,70V</td>
</tr>
<tr>
<td>Blue (LOB)</td>
<td>20mA</td>
<td>3,2V</td>
<td>4V</td>
</tr>
</tbody>
</table>

A resistor must be series-connected by the user.
Resistor value = supply voltage - LED forward voltage
LED forward current
On flying lead versions, the LED resistor can be integrated by APEM on request.

**GENERAL SPECIFICATIONS**
- Panel thickness: 8 mm (.314) max.
- Total travel: 2,5 mm (.098) +/- 0,3 mm
- Typical operating force: 5N +/- 2N
- Mechanical life: 200,000 cycles
- Torque: 0,8 Nm max. applied to nut
- Soldering: 320°C max. for 3 sec.

**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

**Panel Cut-Out**

- Flat seal

**Matrix Mounting**

UD1006-A
# IR series

Sealed pushbutton switches - bushing Ø 16 mm - latching

**Overview**

<table>
<thead>
<tr>
<th>IR SERIES</th>
<th>Actuator shape</th>
<th>Electrical function</th>
<th>Terminals</th>
<th>Contacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Square</td>
<td>1 ON - OFF</td>
<td>S</td>
<td>Silver, gold plated</td>
</tr>
<tr>
<td>R</td>
<td>Round, curved</td>
<td></td>
<td>F</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>Round, flat</td>
<td></td>
<td>P</td>
<td></td>
</tr>
</tbody>
</table>

**Actuator colour**

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

**Bushing & bezel finish**

- 2 Black (standard)
- Other : on request.

**LED colour**

- Blank
- LOS Super red
- LOY Yellow
- LOG Green
- LOB 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 bracketted numbers.

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

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

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

IR series
Sealed pushbutton switches - bushing Ø 16 mm - latching
Round - illuminated

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

Solder lug terminals

Curved actuator
IRR1S4
OFF - ON

Flat actuator
IRP1S4
OFF - ON

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

Sealed flying lead terminals

Curved actuator
IRR1F4
OFF - ON

Flat actuator
IRP1F4
OFF - ON

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

ACTUATOR COLOUR

A : satin chrome

BUSHING AND BEZEL FINISH

2 : black (standard)

LED COLOUR

L0S : super red - LOY : yellow - LOG : green - LOB : blue
IR series

Sealed pushbutton switches - bushing Ø 16 mm - latching

Round - non-illuminated

- Gold plated contacts

Solder lug terminals

<table>
<thead>
<tr>
<th>Model</th>
<th>Structure</th>
<th>OFF</th>
<th>ON</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curved</td>
<td>IRR1S4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flat</td>
<td>IRP1S4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Sealed flying lead terminals

<table>
<thead>
<tr>
<th>Model</th>
<th>Structure</th>
<th>OFF</th>
<th>ON</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curved</td>
<td>IRR1F4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flat</td>
<td>IRP1F4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ACTUATOR COLOUR

A: satin chrome

BUSHING AND BEZEL FINISH

2: black (standard)
New!

IR series
Sealed pushbutton switches - bushing Ø 16 mm - latching
Square - illuminated

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

Solder lug terminals
Curved actuator IRC1S4

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

Sealed flying lead terminals
Curved actuator IRC1F4

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

ACTUATOR COLOUR
A : satin chrome

BUSHING AND BEZEL FINISH
2 : black (standard)

LED COLOUR
L0S : super red - L0Y : yellow - L0G : green - L0B : blue

MODEL STRUCTURE
IR series
Sealed pushbutton switches - bushing Ø 16 mm - latching
Square - non-illuminated

- Gold plated contacts

MODEL STRUCTURE

Solder lug terminals
Curved actuator IRC1S4
OFF - ON

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

Sealed flying lead terminals
Curved actuator IRC1F4
OFF - ON

ACTUATOR COLOUR
A: satin chrome

BUSHING AND BEZEL FINISH
2: black (standard)

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