

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from, Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Manufactured from Stainless Steel, Bulgin's extensive range of vandal resistant security switches are designed with a high resistance to wear and tear, corrosion and harsh use in potentially hostile environments such as access control applications.

The front and rear panel mounted versions have three profiles –prominent, domed and low profile – with a choice of switching and IP66 & IP68 front panel sealing which combined together to meet the ergonomic, electrical and environmental demands of switch panel design.

And where the ultimate strength of steel is not needed, there is a brass, chrome plated alternative. The low profile style switches are now also available with a latching, push on - push off, action.

The illuminated versions are available in dot and ring LED indication and a variety of illumination colours including bi-colour LED's. Newer versions also feature LED illumination driven by 6V, 12V & 24V together with rear of panel sealing, these options will add that extra dimension to control panel layouts and functionality.

Vandal Resistant Push Button 12mm Switches 144-162 163-173



Stainless Steel Low Profile Vandal Resistant

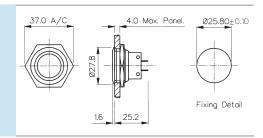


Front Panel Mounting



MP0027

- O 28mm diameter
- S.P.C.O. Microswitch5A, 250Vac

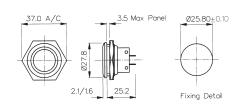


Front Panel Mounting



MP0038 Sealed to IP66

- O Front Panel Sealed to IP66
- O 28mm diameter
- O S.P.C.O. Microswitch
- O 5A, 250Vac



Specifications	MP0027	MP0038
Terminations:	Solder Tags	Solder Tags
Switching:	S.P.C.O. Momentary Action (Microswitch)	S.P.C.O. Momentary Action (Microswitch)
Max. Rating:	5A, 250Vac 2A, 28Vdc	5A, 250Vac 2A, 28Vdc
Contact Resistance:	<10mΩ	<10mΩ
Insulation Resistance:	$>10^3 \mathrm{M}\Omega$	>10³ MΩ
Dielectric Strength:	>2.0kVac	>2.0kVac
Operating Temp. Range:	-20°C to +70°C	-20°C to +70°C
Sealing (Front of panel only):		Protection Classification: IP66 EN60529-1:1992 + A2:2013. (Micro switch not sealed)
Operations Mechanical: Electrical:	1,000,000 (min) 35,000 (min)	1,000,000 (min) 35,000 (min)
Operating Pressure:	7.5N (typ)	12.5N (typ)
Rear Nut Fixing Torque:	2.5Nm	1.13Nm
Materials Mouldings: Tags/Terminations: Switch Body & Button:	Glass Filled Nylon Brass, Tin Plated Stainless Steel	Glass Filled Nylon Brass, Tin Plated Stainless Steel
Contacts:	Fine Silver	Fine Silver
Thread size:	1.0" x 26TPI	1.0" x 26TPI
RoHS	Compliant	Compliant

Switches

Stainless Steel Low Profile Vandal Resistant

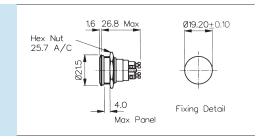
Momentary



Front Panel Mounting



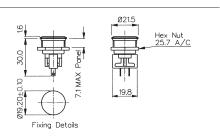
- O Front Panel Sealed to IP68
- O 21.5mm diameter
- O S.P. Push to Make
- 1A, 50Vac/dc
- Industry Standard Size



Front Panel Mounting



- O Front Panel Sealed to IP66
- 21.5mm diameter
- O S.P.C.O. Microswitch
- O 5A, 250Vac



Specifications	MP0037	MP0031
Terminations:	Screw Terminals	Solder Tags
Switching:	S.P. Push to make Momentary action	S.P.C.O. Momentary Action (Microswitch)
Max. Rating:	1A, 50Vac/dc	5A, 250Vac 2A, 28Vdc
Contact Resistance:	<10mΩ	<10mΩ
Insulation Resistance:	$>$ 10 5 M Ω	$>10^3 \mathrm{M}\Omega$
Dielectric Strength:	>1.0kVac	>2.0kVac
Operating Temp. Range:	-20°C to +70°C	-20°C to +70°C
Sealing (Front of panel only):	Protection Classification: IP68 EN 60529:1992+A2:2013 (Micro switch not sealed)	Protection Classification: IP66 EN60529-1:1992 + A2:2013. (Micro switch not sealed)
IP68 rating 10M for 2 weeks test:	Passed	(Micro Switch Hot Sealed)
Operations Mechanical: Electrical:	1,000,000 (min) 30,000 (min)	1,000,000 (min) 35,000 (min)
Operating Pressure:	7.5N (typ)	4.7N (typ)
Rear Nut Fixing Torque:	0.57Nm	0.57Nm
Materials Mouldings: Tags/Terminations: Switch Body & Button:	Glass Filled Nylon Brass, Silver Plated Stainless Steel	Glass Filled Nylon Brass, Tin Plated Stainless Steel
Contacts:	Brass, Silver Plated, Silver	Fine Silver
Thread size:	0.747" x 26TPI	0.747" x 26TPI
RoHS	Compliant	Compliant

Stainless Steel Illuminated Vandal Resistant

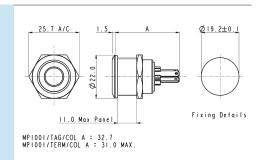


Front Panel Mounting



MPI001- front panel seal to IP66

- Dot illumination
- 22mm diameter
- Ô Single pole push to make
- 0 50mA, 24Vdc contact rating
- Red, Green, Amber, Blue, White or dual colour illumination
- \Diamond Bright daylight LEDs
- 0 Independent LED terminals
- Front panel seal to IP66
- \Diamond Integral supply resistors
- TVS protection



Specifications MPI001/Termination/Colour/Voltage

Illumination style:

Terminations:

/28 (2.8mm tabs),

/TERM or /TE (screw terminals)

Single pole, push to make, tactile (momentary action) Switching:

Max. Switch Rating: 50mA, 24Vdc

LEDs (ratings @ 20mA)

Part No. /RD /GN /BL /WH /D5 /AM /D1 /D4 Colours White Red/Green Red/Blue Green/Blue Red Green Amber Blue Luminous Intensity 900mcd 2500mcd 900mcd 1500mcd 900mcd 2500mcd/5000mcd 2000mcd/850mcd 4000mcd/2000mcd Forward Voltage 1.85V 3.5V 2.3V 3.5V 3.6V 2.05V/3.6V 2.0V/3.6V 3.6V/3.6V Forward Current 20mA 20mA 20mA 20mA 20mA 20mA 20mA 20mA Moulding Colour Red Blue White Black Green Amber Black Black

Illumination Voltage: /no suffix No resistor fitted. An appropriate resistor must be series connected by the user. Voltages as above.

6Vdc /12 /24 24Vdc $<100 m\Omega$

Contact Resistance: Insulation Resistance: >10³ MΩ

Dielectric Strength: Contact to Panel >2.0kV

Contact to Contact 1500

Operating Temp. Range:

Sealing (Front of panel only):

Protection Classification: IP66 EN60529-1:1992 + A2:2013. (Micro switch not sealed)

Operations Mechanical: 750,000 (min) Electrical: 35,000 (min)

Operating Pressure: 12N Rear Nut Fixing Torque: 0.57Nm

Screw Terminal Torque 0.2Nm Max

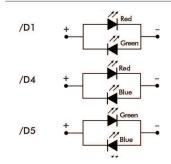
Materials

Switch assembly: UL94V-0 rated Polyamide (Nylon)

Tags: Copper Alloy Terminals: Copper Alloy Switch Body & Button: Stainless Steel Lens and Lens Body: Polycarbonate O ring: Nitrile Internal seal: Silicone Contact Plate: Gold Plated Thread size: 18.97mm x 26TPI

ESD Handling precautions must be taken Compliant

Dual Colour LED Configuration



Stainless Steel Illuminated Vandal Resistant

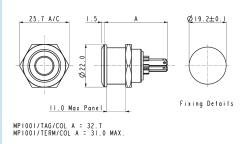


Front Panel Mounting



MPI002- front panel seal to IP66

- Ring illumination
- 22mm diameter
- Ô Single pole push to make
- 0 50mA, 24Vdc contact rating
- Red, Green, Amber, Blue, White or dual colour illumination
- \Diamond Bright daylight LEDs
- 0 Independent LED terminals
- Front panel seal to IP66
- \Diamond Integral supply resistors
- TVS protection



Specifications MPI002/Termination/Colour/Voltage

Ring Illumination style:

/28 (2.8mm tabs), Terminations:

/TERM or /TE (screw terminals)

Switching: Single pole, push to make, tactile (momentary action)

Max. Switch Rating: 50mA, 24Vdc

LEDs (ratings @ 20mA)

Part No. /RD /GN /AM /BI /WH /D1 /D4 /D5 /D6 Colours Red Amber Blue White Red/Green Red/Blue Green/Blue Green/White Green Luminous Intensity 900mcd 2.3V 900mcd 3.6V 2500mcd/5000mcd 2.05V/3.6V 2000mcd/850mcd 2.0V/3.6V 4000mcd/2000mcd 3.6V/3.6V 178mcd/450mcd 3.4V/3.2V 900mcd 2500mcd 1500mcd Forward Voltage 3.5V 3.5V 1.85V Forward Current 20mA 20mA 20mA 20mA 20mA 20mA 20mA Moulding Colour Red Green Ambei Blue White Black Black Black Black

Illumination Voltage: /no suffix No resistor fitted. An appropriate resistor must be series connected by the user. Voltages as above.

> /6 6Vdc /12 12V/dc /24 24Vdc $<100 m\Omega$ $>10^3 M\Omega$

Insulation Resistance: Dielectric Strength: Contact to Panel >2.0kV

Contact to Contact 1500

Contact Resistance:

Operating Temp. Range: -30°C to +70°C

Sealing (Front of panel only): Protection Classification: IP66 EN60529-1:1992 + A2:2013. (Micro switch not sealed) Operations

. Mechanical: 750,000 (min) Electrical: 35,000 (min)

Operating Pressure: 12N Rear Nut Fixing Torque: 0.57Nm

Screw Terminal Torque 0.2Nm Max

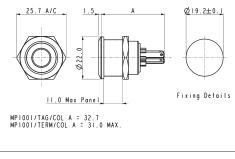
Materials

Switch assembly: UL94V-0 rated Polyamide (Nylon) Copper Alloy

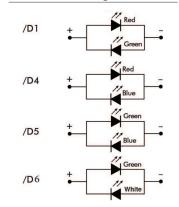
Terminals: Copper Alloy Switch Body & Button: Stainless Steel Lens and Lens Body: Polycarbonate O ring: Nitrile Internal seal: Silicone Contact Plate: Gold Plated Thread size: 18.97mm x 26TPI

ESD Handling precautions must be taken

Compliant



Dual Colour LED Configuration



Stainless Steel Illuminated Vandal Resistant

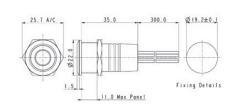


Rear Panel Sealed - Flying Leads



MPI002/FL/xx/x

- \bigcirc Ring illumination
- 0 22mm diameter
- Single pole push to make
- \bigcirc 50mA, 24Vdc contact rating
- Red, Green, Amber, Blue, White or dual colour illumination
- Bright daylight LEDs
- 0 Independent LED terminals
- Front panel seal to IP66
- Ò Integral supply resistors
- \Diamond TVS protection



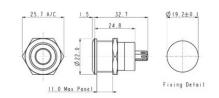
Flying lead colours: LED: red + and black -. Switch contacts: white

Rear Panel Sealed - Solder Tags



MPI001/RP/xx/x

- Dot or ring illumination
- 22mm diameter
- 0 Single pole push to make
- \bigcirc 50mA, 24Vdc contact rating
- Ó Red, Green, Amber, Blue & White illumination
- \bigcirc Bright daylight LEDs
- Independent LED terminals
- Front and rear panel seal to IP66
- \Diamond Solder tag termination
- TVS protection



LED terminals marked + and -. Switch terminals unmarked.

Illumination style:

/FL (Flying leads) Terminations:

Switching: Single pole, push to make, tactile (momentary action)

Max. Switch Rating: 50mA, 24Vdc

LEDs (ratings @ 20mA)

Part No. Colours Luminous Intensity Forward Voltage Forward Current Moulding Colour

Specifications

Illumination Voltage:

Contact Resistance: Insulation Resistance:

Dielectric Strength:

Operating Temp. Range:

Sealing (Front of panel only):

Operations Mechanical: Electrical:

Operating Pressure: Rear Nut Fixing Torque:

Materials Switch assembly: Tags:

Terminals: Switch Body & Button: Lens and Lens Body: O rina:

Internal seal: Contact Plate: Thread size:

RoHS

MPI001/Termination/Colour/Voltage

Dot

/RP (Solder tags)

/RD

Red

Red

/6

/12

/24

<100mΩ

 $>10^3 M\Omega$

/GN /AM Green Amber 900mcd 2500mcd 900mcd 1.85V 3.5V 2.3V 20mA

20mA 20mA Green Amber

3.5V 20mA Blue

/BL Blue White 1500mcd

900mcd 3.6V 20mA White

/WH

/no suffix No resistor fitted. An appropriate resistor must be series

connected by the user. Voltages as above.

24Vdc Contact to Panel >2.0kV

Contact to Contact 1500 -30°C to +70°C

6Vdc

12Vdc

Protection Classification: IP66 EN60529-1:1992 + A2:2013. (Micro switch not sealed)

750,000 (min) 35.000 (min)

12N 0.57Nm

UL94V-0 rated Polyamide (Nylon)

Copper Alloy Copper Alloy Stainless Steel Polycarbonate Nitrile Silicone Gold Plated 18.97mm x 26TPI

ESD Handling precautions must be taken Compliant

Copper Alloy Stainless Steel Polycarbonate Nitrile Silicone Gold Plated

ESD Handling precautions must be taken

Compliant

MPI002/Termination/Colour/Voltage

/FL (Flying leads)

/RP (Solder tags)

Single pole, push to make, tactile (momentary action)

50mA, 24Vdc

/RD /GN /AM /BL Red Green Amber 900mcd 2500mcd 900mcd 1.85V 3.5V 2.3V 20mA 20mA 20mA Red Green

Blue 3.5V 20mA Amber Blue

White 1500mcd 900mcd 3.6V 20mA White

/WH

/no suffix No resistor fitted. An appropriate resistor must be series connected by the user. Voltages as above. /6

6Vdc 12Vdc /12 /24 24Vdc $<100m\Omega$ >103 MO

Contact to Panel >2.0kV Contact to Contact 1500

-30°C to +70°C

Protection Classification: IP66 EN60529-1:1992 + A2:2013.

(Micro switch not sealed)

35,000 (min) 12N 0.57Nm

750.000 (min)

UL94V-0 rated Polyamide (Nylon) Copper Allov

18.97mm x 26TPI

Low Profile Brass Chrome Plated Vandal Resistant

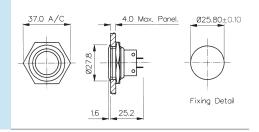


Front Panel Mounting



MPB038 Sealed to IP66

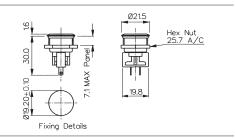
- Front Panel Sealed to IP66
- 0 28mm diameter
- S.P.C.O. Microswitch
- O 5A, 250Vac



Front Panel Mounting



- Front Panel Sealed to IP66
- 21mm diameter
- S.P.C.O. Microswitch
- O 5A, 250Vac

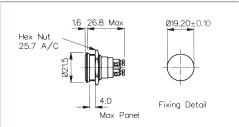


Front Panel Mounting



MPB037 Sealed to IP68

- Front Panel Sealed to IP68
- 21.5mm diameter
- 0 S.P. Push to Make
- 1A, 50Vac/dc



Specifications	MPB038	MPB031	MPB037
Terminations:	Solder Tags	Solder Tags	Screw Terminals
Switching:	S.P.C.O. Momentary Action (Microswitch)	S.P.C.O. Momentary Action (Microswitch)	S.P. Push to make Momentary action
Max. Rating:	5A, 250Vac. 2A, 28Vdc	5A, 250Vac. 2A, 28Vdc	1A, 50Vac/dc
Contact Resistance:	<10mΩ	<10mΩ	<10mΩ
Insulation Resistance:	$>10^3\mathrm{M}\Omega$	$>10^3~\mathrm{M}\Omega$	$>10^5 \mathrm{M}\Omega$
Dielectric Strength:	>2.0kVac	>2.0kVac	>1.0kVac
Operating Temp. Range:	–20°C to +70°C	–20°C to +70°C	-20°C to +70°C
Sealing (Front of panel only):	Protection Classification: IP66 EN60529-1:1992 + A2:2013. (Micro switch not sealed)	Protection Classification: IP66 EN60529-1:1992 + A2:2013. (Micro switch not sealed)	Protection Classification: IP68 EN60529-1:1992 + A2:2013. (Micro switch not sealed) (10m for 2 weeks)
Operations Mechanical: Electrical:	1,000,000 (min) 35,000 (min)	1,000,000 (min) 35,000 (min)	1,000,000 (min) 30,000 (min)
Operating Pressure:	12.5N (typ)	4.7N (typ)	7.5N (typ)
Rear Nut Fixing Torque:	1.13Nm	0.57Nm	0.57Nm
Materials Mouldings: Tags/Terminations: Switch Body & Button:	Glass Filled Nylon Brass, Tin Plated Brass	Glass Filled Nylon Brass, Tin Plated Brass	Glass Filled Nylon Brass, Tin Plated Brass
Contacts:	Fine Silver	Fine Silver	Brass, Silver Plated, Silver
Thread size:	1.0" x 26TPI	0.747" x 26TPI	0.747" x 26TPI
RoHS	Compliant	Compliant	Compliant

Stainless Steel Large Diameter Vandal Resistant

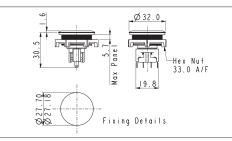


Front Panel Mounting - Low Profile



MP0050

- Front Panel Sealed to IP68
- Flush button32.0mm diameter
- O S.P.C.O. switching
- Momentary action
- O 5A, 250Vac

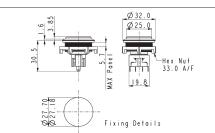


Front Panel Mounting - Protruding Profile



MP0050/2

- Front Panel Sealed to IP68
- Protruding button
- 32.0mm diameterS.P.C.O. switching
- Momentary action5A, 250Vac



Specifications	MP0050	MP0050/2
Terminations:	Solder Tags	Solder Tags
Switching:	S.P.C.O. Momentary Action (Microswitch)	S.P.C.O. Momentary Action (Microswitch)
Max. Rating:	5A, 250Vac. 2A, 28Vdc	5A, 250Vac. 2A, 28Vdc
Contact Resistance:	<10mΩ	<10mΩ
Insulation Resistance:	$>10^3 \text{M}\Omega$	$>10^3~\mathrm{M}\Omega$
Dielectric Strength:	>2.0kVac	>2.0kVac
Operating Temp. Range:	-20°C to +70°C	-20°C to +70°C
Sealing (Front of panel only):	Protection Classification: IP66 EN60529-1:1992 + A2:2013. (Micro switch not sealed)	Protection Classification: IP66 EN60529-1:1992 + A2:2013. (Micro switch not sealed)
Operations Mechanical: Electrical:	1,000,000 (min) 35,000 (min)	1,000,000 (min) 35,000 (min)
Operating Pressure:	4.7Nm	4.7N (typ)
Rear Nut Fixing Torque:	0.57Nm	0.57Nm
Materials Mouldings: Tags/Terminations: Switch Body & Button:	Glass Filled Nylon Brass, Tin Plated Stainless Steel	Glass Filled Nylon Brass, Tin Plated Stainless Steel
Contacts:	Fine Silver	Fine Silver
Thread size:	M27 x 1.0-6H	M27 x 1.0-6H
RoHS	Compliant	Compliant

Stainless Steel Domed Vandal Resistant

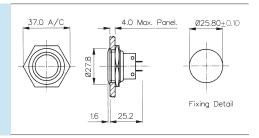


Front Panel Mounting



MP0027/3

- O 28mm diameter
- O Domed Profile
- S.P.C.O. Mic5A, 250Vac S.P.C.O. Microswitch

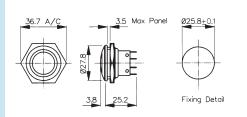


Front Panel Mounting



MP0038/3 Sealed to IP66

- Front Panel Sealed to IP66
- O 28mm diameter O Domed Profile
- O S.P.C.O. Microswitch
- O 5A, 250Vac



Specifications	MP0027/3	MP0038/3
Terminations:	Solder Tags	Solder Tags
Switching:	S.P.C.O. Momentary Action (Microswitch)	S.P.C.O. Momentary Action (Microswitch)
Max. Rating:	5A, 250Vac. 2A, 28Vdc	5A, 250Vac. 2A, 28Vdc
Contact Resistance:	<10mΩ	<10mΩ
Insulation Resistance:	$>10^3 \mathrm{M}\Omega$	>10³ MΩ
Dielectric Strength:	>2.0kVac	>2.0kVac
Operating Temp. Range:	-20°C to +70°C	−20°C to +70°C
Sealing (Front of panel only):		Protection Classification: IP66 EN60529-1:1992 + A2:2013. (Micro switch not sealed)
Operations Mechanical: Electrical:	1,000,000 (min) 35,000 (min)	1,000,000 (min) 35,000 (min)
Operating Pressure:	7.5N (typ)	12.5N (typ)
Rear Nut Fixing Torque:	2.5Nm	1.13Nm
Materials Mouldings: Tags/Terminations: Switch Body & Button:	Glass Filled Nylon Brass, Tin Plated Stainless Steel	Glass Filled Nylon Brass, Tin Plated Stainless Steel
Contacts:	Fine Silver	Fine Silver
Thread size:	1.0" x 26TPI	0.747" x 26TPI
RoHS	Compliant	Compliant

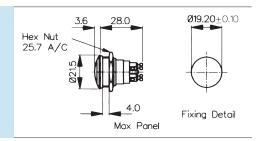
Stainless Steel Domed Vandal Resistant



Front Panel Mounting



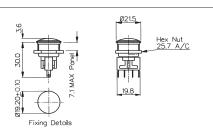
- Front Panel Sealed to IP68
- 21.5mm diameter
- Domed Profile
- O S.P. Push to Make
- 1A, 50Vac/dc



Front Panel Mounting



- Front Panel Sealed to IP66
- 21.5mm diameter
- O Domed Profile
- O S.P.C.O. Microswitch
- O 5A, 250Vac



Specifications	MP0037/3	MP0031/3
Terminations:	Screw Terminals	Solder Tags
Switching:	S.P. Push to make Momentary action	S.P.C.O. Momentary Action (Microswitch)
Max. Rating:	1A, 50Vac/dc	5A, 250Vac. 2A, 28Vdc
Contact Resistance:	<10mΩ	<10mΩ
Insulation Resistance:	$>10^5 \mathrm{M}\Omega$	>10³ MΩ
Dielectric Strength:	>1.0kVac	>2.0kVac
Operating Temp. Range:	-20°C to +70°C	-20°C to +70°C
Sealing (Front of panel only):	Protection Classification: IP68 EN60529-1:1992 + A2:2013. (Micro switch not sealed) (10m for 2 weeks)	Protection Classification: IP66 EN60529-1:1992 + A2:2013. (Micro switch not sealed)
Operations Mechanical: Electrical:	1,000,000 (min) 35,000 (min)	1,000,000 (min) 35,000 (min)
Operating Pressure:	7.5N (typ)	4.7N (typ)
Rear Nut Fixing Torque:	2.5Nm	0.57Nm
Materials Mouldings: Tags/Terminations: Switch Body & Button:	Glass Filled Nylon Brass, Tin Plated Stainless Steel	Glass Filled Nylon Brass, Tin Plated Stainless Steel
Contacts:	Brass, Silver Plated, Silver	Fine Silver
Thread size:	0.747" x 26TPI	0.747" x 26TPI
RoHS	Compliant	Compliant

Stainless Steel Prominent Button Vandal Resistant

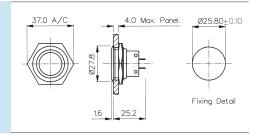


Front Panel Mounting



MP0027/2

- O 28mm diameter
- Prominent Button
 S.P.C.O. Microswit S.P.C.O. Microswitch
- O 5A, 250Vac

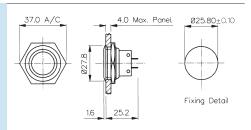


Front Panel Mounting



MP0038/2 Sealed to IP66

- Front Panel Sealed to IP66
- 28mm diameter
- O Prominent Button
- O S.P.C.O. Microswitch
- O 5A, 250Vac



Specifications	MP0027/2	MP0038/2
Terminations:	Solder Tags	Solder Tags
Switching:	S.P.C.O. Momentary Action (Microswitch)	S.P.C.O. Momentary Action (Microswitch)
Max. Rating:	5A, 250Vac 2A, 28Vdc	5A, 250Vac. 2A, 28Vdc
Contact Resistance:	<10mΩ	<10mΩ
Insulation Resistance:	$>10^3\mathrm{M}\Omega$	$>10^3~\mathrm{M}\Omega$
Dielectric Strength:	>2.0kVac	>2.0kVac
Operating Temp. Range:	–20°C to +70°C	-20°C to +70°C
Sealing (Front of panel only):		Protection Classification: IP66 EN60529-1:1992 + A2:2013. (Micro switch not sealed)
Operations Mechanical: Electrical:	1,000,000 (min) 35,000 (min)	1,000,000 (min) 35,000 (min)
Operating Pressure:	7.5N (typ)	12.5N (typ)
Rear Nut Fixing Torque:	2.5Nm	1.13Nm
Materials Mouldings: Tags/Terminations: Switch Body & Button:	Glass Filled Nylon Brass, Tin Plated Stainless Steel	Glass Filled Nylon Brass, Tin Plated Stainless Steel
Contacts:	Fine Silver	Fine Silver
Thread size:	1.0" x 26TPI	1.0" x 26TPI
RoHS	Compliant	Compliant

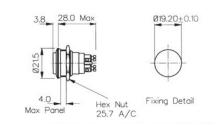
Stainless Steel Prominent Button Vandal Resistant



Front Panel Mounting



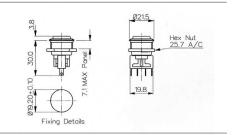
- O Front Panel Sealed to IP68
- 21.5mm diameter
- O Prominent Button
- O S.P. Push to Make
- 1A, 50Vac/dc



Front Panel Mounting



- O Front Panel Sealed to IP66
- O 21.5mm diameter
- Prominent Button
- S.P.C.O. Microswitch
 SA, 250Vac



Specifications	MP0037/2	MP0031/2
Terminations:	Screw Terminals	Solder Tags
Switching:	S.P. Push to make Slow momentary action	S.P.C.O. Momentary Action (Microswitch)
Max. Rating:	1A, 50Vac/dc	5A, 250Vac. 2A, 28Vdc
Contact Resistance:	<10mΩ	<10mΩ
Insulation Resistance:	$>10^5 \mathrm{M}\Omega$	$>10^3 M\Omega$
Dielectric Strength:	>1.0kVac	>2.0kVac
Operating Temp. Range:	-20°C to +70°C	-20°C to +70°C
Sealing (Front of panel only):	Protection Classification: IP68 EN60529-1:1992 + A2:2013. (Micro switch not sealed) (10m for 2 weeks)	Protection Classification: IP66 EN60529-1:1992 + A2:2013. (Micro switch not sealed)
Operations Mechanical: Electrical:	1,000,000 (min) 35,000 (min)	1,000,000 (min) 35,000 (min)
Operating Pressure:	7.5N (typ)	4.7N (typ)
Rear Nut Fixing Torque:	0.57Nm	0.57Nm
Materials Mouldings: Tags/Terminations: Switch Body & Button:	Glass Filled Nylon Brass, Tin Plated Stainless Steel	Glass Filled Nylon Brass, Tin Plated Stainless Steel
Contacts:	Brass, Silver Plated, Silver	Fine Silver
Thread size:	0.747" x 26TPI	0.747" x 26TPI
RoHS	Compliant	Compliant

Switches

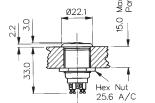
Push Button



Front Panel Mounting



- **Proud Fitting**
- 22mm diameter \bigcirc
- ŏ S.P. Push to Make
- 1A, 50V
- Brass, Chrome Plated Body, MP0033 Internally Sealed
 - Stainless Steel Button





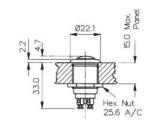
Front Panel Mounting

Switching:



MP0013/2 MP0033/2

- Prominent Button
- 22mm diameter \Diamond
- 0 S.P. Push to Make
- 0 1A, 50V
- \bigcirc Brass, Chrome Plated Body, Stainless Steel Button
- MP0033/2 Internally Sealed





Specifications	MP0013, MP0033	MP0013/2, MP0033/2
Terminations:	Screw Terminals	Screw Terminals

S.P. Push to make S.P. Push to make Slow momentary action Slow momentary action

Max. Rating: 1A, 50Vac/dc 1A, 50Vac/dc

Contact Resistance: <15mΩ <15 $m\Omega$ Insulation Resistance: $>10^4~M\Omega$ $>10^4~M\Omega$ Dielectric Strength: >2.5kVac >2.5kVac

Operating Temp. Range: -20°C to +85°C -20°C to +85°C

MP0033/2 only - internally sealed against ingress of water and dust MP0033 only - internally sealed (Front of panel only): against ingress of water and dust

Materials Mouldings: Glass Filled Nylon

Glass Filled Nylon Tags/Terminations: Brass, Silver Plated Brass, Silver Plated Body: Brass, Chrome Plated Body: Brass, Chrome Plated Switch Body & Button: Button: Stainless Steel Button: Stainless Steel Contacts: Copper, Silver Plated Copper, Silver Plated

0.747" x 26TPI 0.747" x 26TPI Thread Size:

RoHS Compliant Compliant

Stainless Steel - Momentary

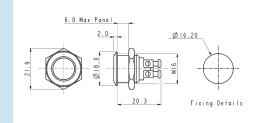


Flush Profile



MP0042/1

- 18mm bezel diameter
- 16mm panel hole
- S.P. Push to make
- O Polished finish
- O 2A, 48Vdc

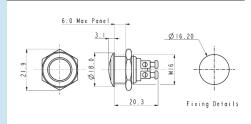


Domed Profile



MP0042/2

- 18mm bezel diameter
- 16mm panel hole
- S.P. Push to make
- O Polished finish
- O 2A, 48Vdc

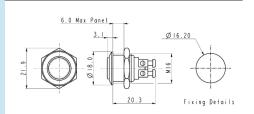


Prominent Button



MP0042/3

- 18mm bezel diameter
- 16mm panel hole
- O S.P. Push to make
- Polished finish
- 2A, 48Vdc



Specifications	MP0042/1	MP0042/2	MP0042/3
Terminations:	Screw Terminals	Screw Terminals	Screw Terminals
Switching:	S.P. Push to make	S.P. Push to make	S.P. Push to make
Max. Rating:	2A, 48Vdc	2A, 48Vdc	2A, 48Vdc
Contact Resistance:	$50m\Omega$ at 1A, 2V	50mΩ at 1A, 2V	$50m\Omega$ at 1A, 2V
Insulation Resistance:	>10 ³ MΩ @ 500Vdc	>10 ³ MΩ @ 500Vdc	>10 ³ MΩ @ 500Vdc
Dielectric Strength:	>2.0kVac	>2.0kVac	>2.0kVac
Operating Temp. Range:	-20°C to +55°C	–20°C to +55°C	–20°C to +55°C
Operations Mechanical: Electrical:	1,000,000 (min) 100,000 (min)	1,000,000 (min) 100,000 (min)	1,000,000 (min) 100,000 (min)
Rear Nut Fixing Torque:	12Nm	12Nm	12Nm
Materials Mouldings: Tags/Terminations: Switch Body & Button:	Nylon Brass, Silver Plated Stainless Steel (Polished)	Nylon Brass, Silver Plated Stainless Steel (Polished)	Nylon Brass, Silver Plated Stainless Steel (Polished)
Contacts:	Silver	Silver	Silver
Thread size:	Gold Plated Brass version available	Gold Plated Brass version available	Gold Plated Brass version available
Sealing:	IP65	IP65	IP65
Impact Rating:	IK08	IK08	IK08
RoHS	Compliant	Compliant	Compliant

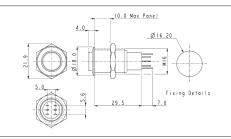
Stainless Steel - Momentary



Low Profile



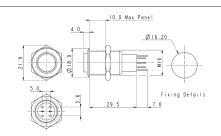
- O 18mm bezel diameter
- 16mm fixing hole diameterD.P.C.O
- O 250V ac

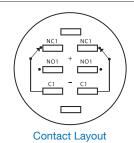


Prominent Button



- O 18mm bezel diameter
- 16mm fixing hole diameter○ D.P.C.O○ 250V ac





Specifications	MP0045/1D0NN000	MP0045/3D0NN000
Terminations:	Solder tags	Solder tags
Switching:	D.P.C.O Momentary Action	D.P.C.O Momentary Action
Max. Rating:	250V ac	250V ac
Contact Resistance:	50mΩ max. @ 1A, 2V	50mΩ max. @ 1A, 2V
Insulation Resistance:	$>10^3 \mathrm{M}\Omega$ @ 500Vdc	>10 ³ MΩ @ 500Vdc
Dielectric Strength:	> 2.0kVac	> 2.0kVac
Operating Temp. Range:	-20°C to +55°C	-20°C to +55°C
Operations Mechanical: Electrical:	200,000 (min) 30,000 (min)	200,000 (min) 30,000 (min)
Rear Nut Fixing Torque:	12Nm	12Nm
Materials Mouldings: Tags/Terminations: Switch Body & Button:	Nylon Brass, Silver Plated Stainless Steel	Nylon Brass, Silver Plated Stainless Steel
Contacts:	Silver	Silver
Variants:	Nickel Plated Brass version available Details on request	Nickel Plated Brass version available Details on request
RoHS	Compliant	Compliant

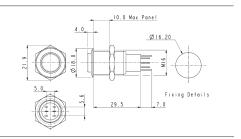
Stainless Steel - Latching



Low Profile



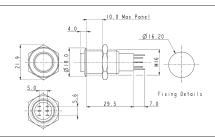
- O 18mm bezel diameter
- 16mm fixing hole diameter
 D.P.C.O.
 250V ac

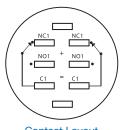


Prominent Button



- O 18mm bezel diameter
- 16mm fix○ D.P.C.O.○ 250V ac 16mm fixing hole diameter





Contact Layou

Specifications	MP0045/1E0NN000	MP0045/3E0NN000
Terminations:	Solder Tags	Solder Tags
Switching:	D.P.C.O Latching Action	D.P.C.O Latching Action
Max. Rating:	250V ac	250V ac
Contact Resistance:	50mΩ max. @ 1A, 2V	50mΩ max. @ 1A, 2V
Insulation Resistance:	$>10^3\mathrm{M}\Omega$ @ 500Vdc	>10 ³ MΩ @ 500Vdc
Dielectric Strength:	>2.0kVac	>2.0kVac
Operating Temp. Range:	-20°C to +55°C	-20°C to +55°C
Operations Mechanical: Electrical:	200,000 (min) 30,000 (min)	200,000 (min) 30,000 (min)
Rear Nut Fixing Torque:	12Nm	12Nm
Materials Mouldings: Tags/Terminations: Switch Body & Button:	Nylon Brass, Tin Plated Stainless Steel (Polished)	Nylon Brass, Tin Plated Stainless Steel (Polished)
Contacts:	Silver	Silver
Thread size:	Nickel Plated Brass version Details on request	Nickel Plated Brass version Details on request
RoHS	Compliant	Compliant

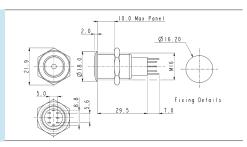
Stainless Steel Illuminated Momentary



Front Panel Mounting



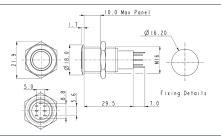
- O Dot Illuminated
- 18mm bezel diameter
- D.P.C.O.
- ŏ 3A, 250V ac
- Red, Green, Amber or Blue Illumination
- Separate LED Terminals

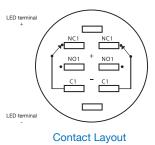


Front Panel Mounting



- Ring Illuminated
- 18mm bezel diameter
- D.P.C.O.
- ŏ O O 3A, 250V ac
- O Red, Green, Amber or Blue
 - Illumination
- Separate LED Terminals





OUI	itact	ь

Specifications	MP0045/1D1/Colour/Voltage	MP0045/1D2/Colour/Voltage
Terminations:	Solder Tags	Solder Tags
Illumination:	Dot	Ring
Switching:	D.P.C.O. Momentary Action	D.P.C.O. Momentary Action
Max. Switch Rating:	3A, 250Vac	3A, 250Vac
LEDs Colours Part No.	Red Green Amber Blue /RD /GN /AM /BL	Red Green Amber Blue /RD /GN /AM /BL
Voltage Part No.	12Vdc 220Vdc /012 /220	12Vdc 220Vdc /012 /220
Contact Resistance:	50mΩ max. @ 1A, 2Vdc	50mΩ max. @ 1A, 2Vdc
Insulation Resistance:	>10³ MΩ @ 500Vac	>10³ MΩ @ 500Vac
Dielectric Strength:	>2.0kVac	>2.0kVac
Operating Temp. Range:	-20°C to +55°C	-20°C to +55°C
Operations Mechanical: Electrical:	200,000 (min) 30,000 (min)	200,000 (min) 30,000 (min)
Rear Nut Fixing Torque:	12Nm	12Nm
Materials Mouldings: Tags: Switch Body & Button: Variants	Nylon Brass, Silver Plated Stainless Steel (Polished) Prominent Button, details on request	Nylon Brass, Silver Plated Stainless Steel (Polished) Prominent Button, details on request
RoHS	Compliant	Compliant

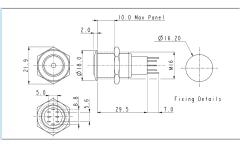
Stainless Steel Illuminated Latching



Front Panel Mounting



- Dot Illuminated
- 18mm bezel diameter
- \bigcirc D.P.C.O.
- 3A, 250V ac
- Red, Green, Amber or Blue Illumination
- Separate LED Terminals

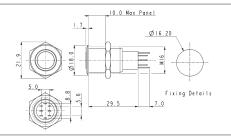


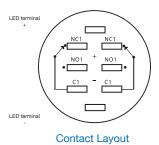
Front Panel Mounting



- Ring Illuminated
- 18mm bezel diameter
- D.P.C.O.
- 3A, 250V ac
- O Red, Green, Amber or Blue Illumination

 Separate LED Terminals





Specifications	MP0045/1E1/Colour/Voltage	MP0045/1E2/Colour/Voltage
Terminations:	Solder Tags	Solder Tags
Illumination:	Ring	Ring
Switching:	D.P.C.O. Momentary Action	D.P.C.O. Momentary Action
Max. Switch Rating:	3A, 250Vac	3A, 250Vac
LEDs Colours Part No.	Red Green Amber Blue /RD /GN /AM /BL	Red Green Amber Blue /RD /GN /AM /BL
Voltage Part No.	12Vdc 220Vdc /012 /220	12Vdc 220Vdc /012 /220
Contact Resistance:	50mΩ max. @ 1A, 2Vdc	50mΩ max. @ 1A, 2Vdc
Insulation Resistance:	>10 ³ MΩ @ 500Vac	>10 ³ MΩ @ 500Vac
Dielectric Strength:	>2.0kVac	>2.0kVac
Operating Temp. Range:	-20°C to +55°C	-20°C to +55°C
Operations Mechanical: Electrical:	200,000 (min) 30,000 (min)	200,000 (min) 30,000 (min)
Rear Nut Fixing Torque:	12Nm	12Nm
Materials Mouldings: Tags: Switch Body & Button: Variants	Nylon Brass, Silver Plated Stainless Steel (Polished) Prominent Button, details on request	Nylon Brass, Silver Plated Stainless Steel (Polished) Prominent Button, details on request

Compliant

Compliant

Switches 8300 Vandal Resistant Switches

Designed to IP66





H8300RP - - -

Key Features

- Momentary or latching
- Ratings up to 12(12) @ 250Vac
- O Single and double pole
- Stainless steel button & bezel
- Vandal resistant construction
- Choice of body styles
- 19.2mm or 22.5mm mounting holes
- Front panel sealed to IP66
- Raised, flat or domed actuator options

Approvals and specifications

** 16(4)A 250Vac T85, 1E4 (10,000 Operations) 12(12)A 250Vac T105, 1E4 (10,000 Operations) 8(8)A 250Vac T105, 5E4 (50,000 Operations) 6(6)A 250Vac T125, 5E4 (50,000 Operations)

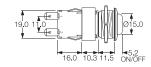
%1 12A 250Vac DP, 13A 250Vac SP 250Vac 1hp, 125Vac 1/2hp UL 85°C, file E45221, CSA file LR10990

In house test: 10(10)A 250Vac—Indicative rating only

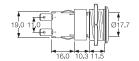
3mm contact gap.
Technical data on pages 4 & 5 (switches), 6 (indicators).

Dimensions

8300RP (H terminals shown)









Terminal	Function	Actuator	Body Code	
C H	8300 (alternate) Single pole ON - OFF	(for P body only) Raised top (stainless steel)		
K T	8301 (momentary ON) Single pole ON - OFF			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	8350 (alternate) Double pole ON - OFF	Flat top (stainless steel)	(for R actuator only) Stainless steel, Soft profile bezel	
X 1	8301 (momentary ON) Single pole		→ Ø19.2 →	
	ON - OFF	P Domed top (stainless steel)	M Stainless steel	
		(Statilless Steel)	Stalliess steel	

Switches 0911 Vandal Resistant Switches





Key Features

- Snap action switches
- Ratings up to 16A, 250Vac
- Round and rectangular buttons
- Single Pole C/O Switch

Approvals and specifications

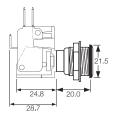
€ 16(4)A 250Vac 5E4 T85

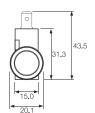
16A 125/250Vac 3/4hp T85 50E3 125V 1/2 HP, 250V 3/4 HP, 0.4A 125Vdc, 0.2A

Approvals apply to switch mechanism only. μ contact gap.

Dimensions

C0911VA





Terminal	Function	Actuator	Body Code
12.0	0911 (momentary) ON - ON	V Flat top (stainless steel)	Stainless steel Chamfer profile bezel Output Panel cut-out Panel thickness up to 8.0mm

Push Button Switches



Bulgin's broad line of pushbutton switches are available in various sizes and configurations. This includes a variety of illumination and terminal options as well as several with high inductive power ratings suitable for motor driven applications. These switches can be found in many markets including home appliances, commercial, medical, audio and security.

- Miniature, round and rectangular push button switches available
- Ratings up to 16A, 250V ac 12(12)A 250V ac rating also available
- Latching and momentary actions
- Choice of actuators (custom option also available)
- Square and Round Mounting Styles



Push Button

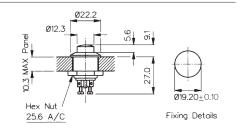


Front Panel Mounting



MP0012/Col

- 22mm diameter
- Prominent Button
- 0 S.P. Push to Make
- \bigcirc Screw Terminals
- Brass, Chrome Plated Body, Glass Filled Nylon Button

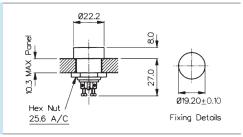






MP0012/1/Col

- 22mm diameter
- 0 Recessed Button
- S.P. Push to Make \Diamond
- Screw Terminals
- Brass, Chrome Plated Body, Glass Filled Nylon Button

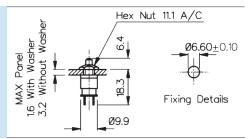


Rear Panel Mounting



MP0016

- S.P. Push to Make
- 0 Solder Tags
- 1A, 28Vac/dc
- Brass Nickel Plated Body, Glass Filled Nylon Button



Specifications	MP0012/Colour	MP0012/1/Colour	MP0016/Colour
Terminations:	Screw Terminals	Screw Terminals	Solder Tags
Switching:	S.P. Push to Make Slow Momentary Action	S.P. Push to Make Slow Momentary Action	S.P. Push to Make Slow Momentary Action
Max. Rating:	0.25A. 250Vac, 1A. 110Vac, 2A. 12Vac/dc	0.25A. 250Vac, 1A. 110Vac, 2A. 12Vac/dc	1A 28Vac/dc (non-inductive)
Contact Resistance:	<15mΩ	<15mΩ	<15mΩ
Insulation Resistance:	$>10^4 \mathrm{M}\Omega$	$>10^4 M\Omega$	$>10^4 M\Omega$
Dielectric Strength:	>2.5kVac	>2.5kVac	>2.0kVac
Operating Temp. Range:	–20°C to +85°C	−20°C to +85°C	–20°C to +85°C
Operation Pressure (typ):	9.18 newtons	9.18 newtons	6.22 newtons
Materials Moulding: Body:	Glass Filled Nylon Brass, Brass, Chrome Plated	Glass Filled Nylon Brass, Brass, Chrome Plated	Glass Filled Nylon Brass, Brass, Chrome Plated
Contacts/Terms:	Brass, Silver Plated	Brass, Silver Plated	Brass, Silver Plated
Variant	Button Colour: Standard - Black, /RD (Red)	Button Colour: Standard - Black, /RD (Red)	Button Colour: Standard - Black, /RD (Red)
RoHS	Compliant	Compliant	Compliant

Switches

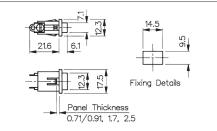
Push Button



Front Panel Mounting



- S.P. Push to MakeSolder Tags
- Nylon Body & Button



Switch Contact Operation

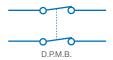






S.P.C.O.





Terminations: Solder Tags

Switching: S.P. Push to Make

Slow Momentary Action

Max. Rating: 0.25A. 250Vac, 0.5A. 110Vac,

1A. 0.1 to 28Vac/dc

Contact Resistance: $<15 m\Omega$ Insulation Resistance: $>10^4 \, M\Omega$ Dielectric Strength: >2.5 kVac

Operating Temp. Range: -20°C to +70°C

Sealing:

Materials

Moulding: Nyl

Tags: Brass, Silver Plated

Body: Nylon

Contacts/Terms: Brass, Silver Plated

Variant Button Colours: Standard - Black,

/WH (White) and /RD (Red). /TERM - (Screw terminals)

RoHS Compliant

8300 Series Push Button

8(8)A 250Vac & 12(12)A 250Vac





Key Features

- Miniature push button
- SA Inductive current rating
- Ratings up to 12(12)A, 250V ac (H suffix)
- O Illuminated and nonilluminated
- O Single and double pole
- Latching and momentary
- Slotted actuator for custom buttons

- Industry standard panel cutout
- O BioCote antimicrobial option
- O Panel cut out: 19.3 x 12.9

Approvals and specifications

16(4)A 250Vac T85, 1E4 (10,000 Operations) 12(12)A 250Vac T105, 1E4 (10,000 Operations) 8(8)A 250Vac T105, 5E4 (50,000 Operations) 6(6)A 250Vac T125, 5E4 (50,000 Operations)

%1 8 8350, 8351, 8353, 8354 12A 250Vac DP, 250Vac 1hp, 125Vac 1/2hp

> 8300, 8301, 8303, 8304 13A 250Vac SP, 250Vac 1hp, 125Vac 1/2hp

UL 85°C, file E45221, CSA file LR10990

In house test: 10(10)A 250Vac—Indicative rating only

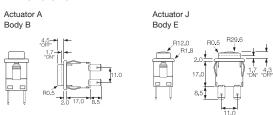
BioCote antimicrobial additive. Independently verified to ISO22196:2007.

3mm contact gap.

Terminal	Function	Actuator	Body Code	Body Colour
C	2 Approvals & ratings vary with function 3 Single pole switches use terminals 1 & 2 (& 3)		Panel cut-out ** Bezel	
6.3 x 0.8	8300 Single Pole ON - OFF	A Standard actuator	B Standard body	B Black
	8301 Single Pole ON - OFF (momentary ON)	H Slotted for custom caps	12.9	W White
A 8.5 As 'H' but right angle 4.8 x 0.8	8303 Single Pole ON - OFF With Light	Slots for snap-in buttons C Square actuator	Softline style body with radiused bezel	
	8304 Single Pole ON - OFF (momentary ON) with light	E	Cut-outs must be punched in the direction of insertion	
K 2.6	8350 Double pole ON - OFF	Radiused actuator	Dimensions for snap-in fixing Panel thickness Dimension X 0.75-1.24 19.1/19.2	
▶ □ 15 28×0.8	8351 Double pole ON - OFF (momentary ON)	F Small round actuator	U.76-1.24 19.7/19.2 1.25-1.99 19.3/19.4 2.00-3.00 19.7/19.8 X and V PCB terminals. Additional dummy terminals may be supplied	
т	8353 Double pole ON - OFF With light	J Smooth curved actuator	for extra support.	
2.6 7.0 1.5 Solder	8354 Double pole ON - OFF (momentary ON)	M		
x v	8355 Single pole ON - OFF Isolated light - switched C, E & M actuators only	D		
4.5 TO TO TO TO THE TAX AS A TOTAL TO THE TAX AS A TOTAL TO TAX AS	8356 Single pole ON - OFF Isolated light - unswitched C, E & M actuators only	Large round actuator		



Dimensions



Examples







⊞ H8353JE - - -⊞ T8353JE - - -



⊎ H8353EB - - -⊎ T8353EB - - -



ਚ H8353CB - - -ਚ T8353CB - - -

Actuator Colour	Lamp Voltage	Legend	Legend Colour	Options	Biocote
LIT					
A Amber	_ None			H 12(12)A 250Vac switch rating Finish	B Biocote
С	2			Matt finish standard except on J and D actuators which are gloss	
Clear	125V Neon			Colour Call sales for custom colours A full range is available for large orders	
G Green	3 250V Neon			Legend printing Select from the examples or call sales for custom legends.	
R Red	7 12V Filament			Special buttons Some of the many options are shown Call sales for the full range	
	8			L167 Protective cover	
UNLIT	24V Filament				
В					
Black				Snaps on to switch bodies fitted with "A" or "J" style actuators, this reduces panel thickness by 0.8mm	
R				unoraces by c.onm	
Red				BioCote Antimicrobial Additive	
w				Moulded components have antimicrobial properties using BioCote silver ion technology.	
White				cooog.	