

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  
181-186

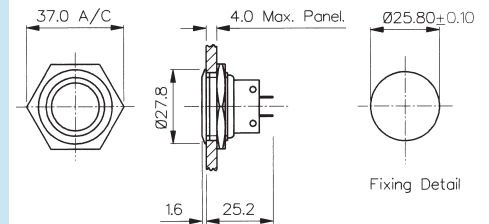


## Front Panel Mounting



MP0027

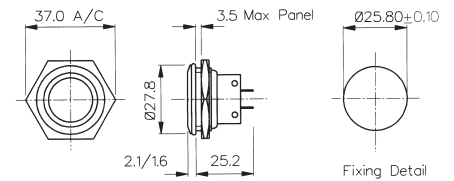
- 28mm diameter
- S.P.C.O. Microswitch
- 5A, 250Vac



## Front Panel Mounting

MP0038  
Sealed to IP66

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

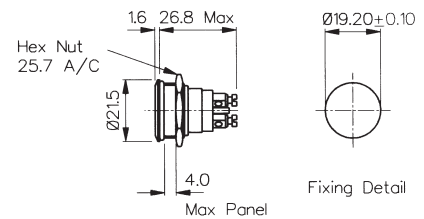


Specifications	MP0027	MP0038
Terminations:	Solder Tags	Solder Tags
Switching:	S.P.C.O. Momentary Action (Microswitch)	S.P.C.O. Momentary Action (Microswitch)
Max. Rating:	5A, 250Vac 2A, 28Vdc	5A, 250Vac 2A, 28Vdc
Contact Resistance:	<10mΩ	<10mΩ
Insulation Resistance:	>10 <sup>3</sup> MΩ	>10 <sup>3</sup> 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:	1,000,000 (min)	1,000,000 (min)
Electrical:	35,000 (min)	35,000 (min)
Operating Pressure:	7.5N (typ)	12.5N (typ)
Rear Nut Fixing Torque:	2.5Nm	1.13Nm
Materials Mouldings:	Glass Filled Nylon	Glass Filled Nylon
Tags/Terminations:	Brass, Tin Plated	Brass, Tin Plated
Switch Body & Button:	Stainless Steel	Stainless Steel
Contacts:	Fine Silver	Fine Silver
Thread size:	1.0" x 26TPI	1.0" x 26TPI
<b>RoHS</b>	Compliant	Compliant

## Front Panel Mounting


**MP0037**  
 Sealed to IP68

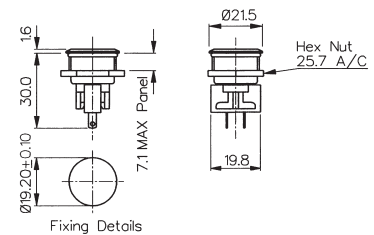
- Front Panel Sealed to IP68
- 21.5mm diameter
- S.P. Push to Make
- 1A, 50Vac/dc
- Industry Standard Size



## Front Panel Mounting

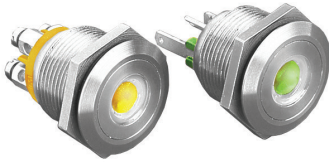

**MP0031**  
 Sealed to IP66

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



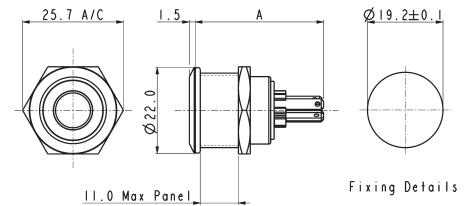
Specifications	MP0037	MP0031
Terminations:	Screw Terminals	Solder Tags
Switching:	S.P. Push to make Momentary action	S.P.C.O. Momentary Action (Microswitch)
Max. Rating:	1A, 50Vac/dc	5A, 250Vac 2A, 28Vdc
Contact Resistance:	<10mΩ	<10mΩ
Insulation Resistance:	>10 <sup>5</sup> MΩ	>10 <sup>3</sup> MΩ
Dielectric 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 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	
Operations		
Mechanical:	1,000,000 (min)	1,000,000 (min)
Electrical:	30,000 (min)	35,000 (min)
Operating Pressure:	7.5N (typ)	4.7N (typ)
Rear Nut Fixing Torque:	0.57Nm	0.57Nm
Materials		
Mouldings:	Glass Filled Nylon	Glass Filled Nylon
Tags/Terminations:	Brass, Silver Plated	Brass, Tin Plated
Switch Body & Button:	Stainless Steel	Stainless Steel
Contacts:	Brass, Silver Plated, Silver	Fine Silver
Thread size:	0.747" x 26TPI	0.747" x 26TPI
<b>RoHS</b>	Compliant	Compliant

## Front Panel Mounting



MPI001 - front panel seal to IP66

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



MPI001/TAG/COL A = 32.7  
 MPI001/TERM/COL A = 31.0 MAX.

## Specifications

## MPI001/Termination/Colour/Voltage

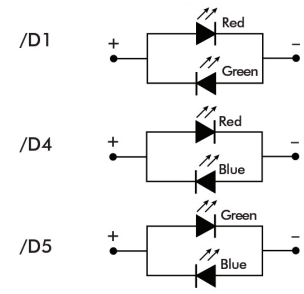
Illumination style:	Dot							
Terminations:	/28 (2.8mm tabs), /TERM or /TE (screw terminals)							
Switching:	Single pole, push to make, tactile (momentary action)							
Max. Switch Rating:	50mA, 24Vdc							
LEDs (ratings @ 20mA)								
Part No.	/RD	/GN	/AM	/BL	/WH	/D1	/D4	/D5
Colours	Red	Green	Amber	Blue	White	Red/Green	Red/Blue	Green/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	Green	Amber	Blue	White	Black	Black	Black
Illumination Voltage:	/no suffix No resistor fitted. <b>An appropriate resistor must be series connected by the user.</b> Voltages as above.							
	/6	6Vdc						
	/12	12Vdc						
	/24	24Vdc						
Contact Resistance:	<100mΩ							
Insulation Resistance:	>10 <sup>9</sup> MΩ							
Dielectric Strength:	Contact to Panel >2.0kV Contact to Contact 1500							
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)
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

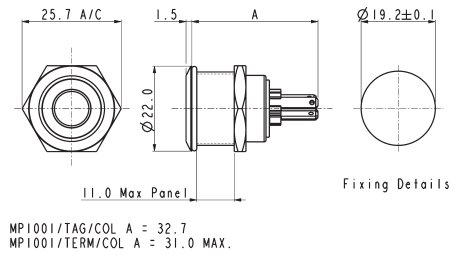


## Front Panel Mounting



MPI002- front panel seal to IP66

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



## Specifications

## MPI002/Termination/Colour/Voltage

<b>Illumination style:</b> Ring <b>Terminations:</b> /28 (2.8mm tabs), /TERM or /TE (screw terminals) <b>Switching:</b> Single pole, push to make, tactile (momentary action) <b>Max. Switch Rating:</b> 50mA, 24Vdc <b>LEDs (ratings @ 20mA)</b> Part No. Colours Luminous Intensity Forward Voltage Forward Current Moulding Colour	<table border="1"> <thead> <tr> <th>/RD</th> <th>/GN</th> <th>/AM</th> <th>/BL</th> <th>/WH</th> <th>/D1</th> <th>/D4</th> <th>/D5</th> <th>/D6</th> </tr> </thead> <tbody> <tr> <td>Red</td> <td>Green</td> <td>Amber</td> <td>Blue</td> <td>White</td> <td>Red/Green</td> <td>Red/Blue</td> <td>Green/Blue</td> <td>Green/White</td> </tr> <tr> <td>900mcd</td> <td>2500mcd</td> <td>900mcd</td> <td>1500mcd</td> <td>900mcd</td> <td>2500mcd/5000mcd</td> <td>2000mcd/850mcd</td> <td>4000mcd/2000mcd</td> <td>178mcd/450mcd</td> </tr> <tr> <td>1.85V</td> <td>3.5V</td> <td>2.3V</td> <td>3.5V</td> <td>3.6V</td> <td>2.05V/3.6V</td> <td>2.0V/3.6V</td> <td>3.6V/3.6V</td> <td>3.4V/3.2V</td> </tr> <tr> <td>20mA</td> <td>20mA</td> <td>20mA</td> <td>20mA</td> <td>20mA</td> <td>20mA</td> <td>20mA</td> <td>20mA</td> <td>20mA</td> </tr> <tr> <td>Red</td> <td>Green</td> <td>Amber</td> <td>Blue</td> <td>White</td> <td>Black</td> <td>Black</td> <td>Black</td> <td>Black</td> </tr> </tbody> </table>	/RD	/GN	/AM	/BL	/WH	/D1	/D4	/D5	/D6	Red	Green	Amber	Blue	White	Red/Green	Red/Blue	Green/Blue	Green/White	900mcd	2500mcd	900mcd	1500mcd	900mcd	2500mcd/5000mcd	2000mcd/850mcd	4000mcd/2000mcd	178mcd/450mcd	1.85V	3.5V	2.3V	3.5V	3.6V	2.05V/3.6V	2.0V/3.6V	3.6V/3.6V	3.4V/3.2V	20mA	20mA	20mA	20mA	20mA	20mA	20mA	20mA	20mA	Red	Green	Amber	Blue	White	Black	Black	Black	Black
/RD	/GN	/AM	/BL	/WH	/D1	/D4	/D5	/D6																																															
Red	Green	Amber	Blue	White	Red/Green	Red/Blue	Green/Blue	Green/White																																															
900mcd	2500mcd	900mcd	1500mcd	900mcd	2500mcd/5000mcd	2000mcd/850mcd	4000mcd/2000mcd	178mcd/450mcd																																															
1.85V	3.5V	2.3V	3.5V	3.6V	2.05V/3.6V	2.0V/3.6V	3.6V/3.6V	3.4V/3.2V																																															
20mA	20mA	20mA	20mA	20mA	20mA	20mA	20mA	20mA																																															
Red	Green	Amber	Blue	White	Black	Black	Black	Black																																															
<b>Illumination Voltage:</b> <b>Contact Resistance:</b> <b>Insulation Resistance:</b> <b>Dielectric Strength:</b> <b>Operating Temp. Range:</b> <b>Sealing (Front of panel only):</b> <b>Operations</b> <b>Mechanical:</b> <b>Electrical:</b> <b>Operating Pressure:</b> <b>Rear Nut Fixing Torque:</b> <b>Screw Terminal Torque</b>	/no suffix No resistor fitted. <b>An appropriate resistor must be series connected by the user.</b> Voltages as above. /6 6Vdc /12 12Vdc /24 24Vdc <100mΩ >10 <sup>3</sup> MΩ 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) 750,000 (min) 35,000 (min) 12N 0.57Nm 0.2Nm Max																																																						

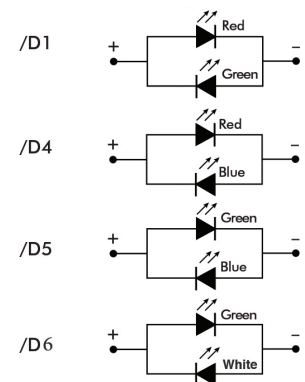
## Materials

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

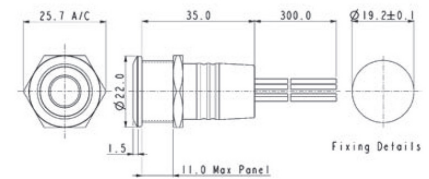


## Rear Panel Sealed - Flying Leads



MPI002/FL/xx/x

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



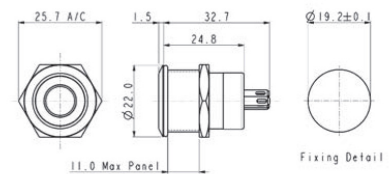
Flying lead colours: LED: red + and black -. Switch contacts: white.

## Rear Panel Sealed - Solder Tags



MPI001/RP/xx/x

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



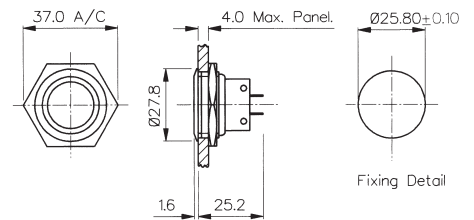
LED terminals marked + and -. Switch terminals unmarked.

Specifications	MPI001/Termination/Colour/Voltage	MPI002/Termination/Colour/Voltage
<b>Illumination style:</b> <b>Terminations:</b> <b>Switching:</b> <b>Max. Switch Rating:</b> <b>LEDs (ratings @ 20mA)</b> Part No. Colours Luminous Intensity Forward Voltage Forward Current Moulding Colour	Dot /FL (Flying leads) /RP (Solder tags) Single pole, push to make, tactile (momentary action) 50mA, 24Vdc /RD /GN /AM /BL /WH Red Green Amber Blue White 900mcd 2500mcd 900mcd 1500mcd 900mcd 1.85V 3.5V 2.3V 3.5V 3.6V 20mA 20mA 20mA 20mA 20mA Red Green Amber Blue White	Ring /FL (Flying leads) /RP (Solder tags) Single pole, push to make, tactile (momentary action) 50mA, 24Vdc /RD /GN /AM /BL /WH Red Green Amber Blue White 900mcd 2500mcd 900mcd 1500mcd 900mcd 1.85V 3.5V 2.3V 3.5V 3.6V 20mA 20mA 20mA 20mA 20mA Red Green Amber Blue White
<b>Illumination Voltage:</b> <b>Contact Resistance:</b> <b>Insulation Resistance:</b> <b>Dielectric Strength:</b>	/no suffix No resistor fitted. An appropriate resistor must be series connected by the user. Voltages as above. /6 6Vdc /12 12Vdc /24 24Vdc <100mΩ >10 <sup>3</sup> MΩ Contact to Panel >2.0kV Contact to Contact 1500	/no suffix No resistor fitted. An appropriate resistor must be series connected by the user. Voltages as above. /6 6Vdc /12 12Vdc /24 24Vdc <100mΩ >10 <sup>3</sup> MΩ Contact to Panel >2.0kV Contact to Contact 1500
<b>Operating Temp. Range:</b> <b>Sealing (Front of panel only):</b> <b>Operations</b> <b>Mechanical:</b> <b>Electrical:</b>	-30°C to +70°C Protection Classification: IP66 EN60529-1:1992 + A2:2013. (Micro switch not sealed) 750,000 (min) 35,000 (min)	-30°C to +70°C Protection Classification: IP66 EN60529-1:1992 + A2:2013. (Micro switch not sealed) 750,000 (min) 35,000 (min)
<b>Operating Pressure:</b> <b>Rear Nut Fixing Torque:</b> <b>Materials</b> <b>Switch assembly:</b> <b>Tags:</b> <b>Terminals:</b> <b>Switch Body &amp; Button:</b> <b>Lens and Lens Body:</b> <b>O ring:</b> <b>Internal seal:</b> <b>Contact Plate:</b> <b>Thread size:</b>	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	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

## Front Panel Mounting


**MPB038**  
 Sealed to IP66

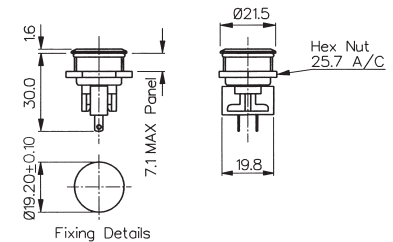
- Front Panel Sealed to IP66
- 28mm diameter
- S.P.C.O. Microswitch
- 5A, 250Vac



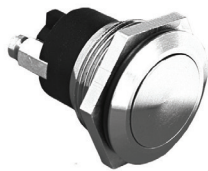
## Front Panel Mounting


**MPB031**  
 Sealed to IP66

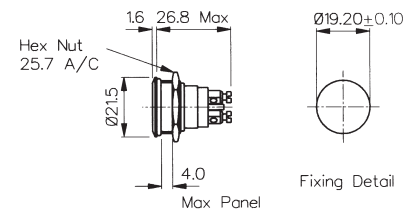
- Front Panel Sealed to IP66
- 21mm diameter
- S.P.C.O. Microswitch
- 5A, 250Vac



## Front Panel Mounting


**MPB037**  
 Sealed to IP68

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



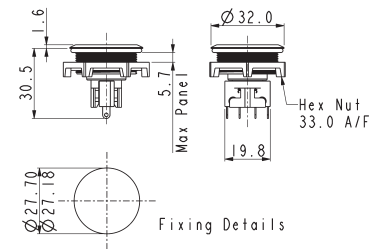
Specifications	MPB038	MPB031	MPB037
Terminations:	Solder Tags	Solder Tags	Screw Terminals
Switching:	S.P.C.O. Momentary Action (Microswitch)	S.P.C.O. Momentary Action (Microswitch)	S.P. Push to make Momentary action
Max. Rating:	5A, 250Vac. 2A, 28Vdc	5A, 250Vac. 2A, 28Vdc	1A, 50Vac/dc
Contact Resistance:	<10mΩ	<10mΩ	<10mΩ
Insulation Resistance:	>10 <sup>3</sup> MΩ	>10 <sup>3</sup> MΩ	>10 <sup>5</sup> MΩ
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:	1,000,000 (min)	1,000,000 (min)	1,000,000 (min)
Electrical:	35,000 (min)	35,000 (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:	Glass Filled Nylon	Glass Filled Nylon	Glass Filled Nylon
Tags/Terminations:	Brass, Tin Plated	Brass, Tin Plated	Brass, Tin Plated
Switch Body & Button:	Brass	Brass	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

## Front Panel Mounting - Low Profile



MP0050

- Front Panel Sealed to IP68
- Flush button
- 32.0mm diameter
- S.P.C.O. switching
- Momentary action
- 5A, 250Vac

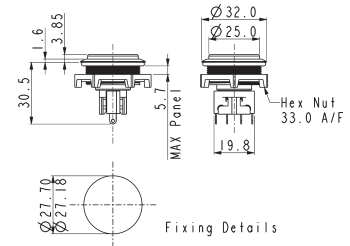


## Front Panel Mounting - Protruding Profile



MP0050/2

- Front Panel Sealed to IP68
- Protruding button
- 32.0mm diameter
- S.P.C.O. switching
- Momentary action
- 5A, 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 <sup>9</sup> MΩ	>10 <sup>9</sup> 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)	Protection Classification: IP66 EN60529-1:1992 + A2:2013. (Micro switch not sealed)
Operations Mechanical:	1,000,000 (min)	1,000,000 (min)
Electrical:	35,000 (min)	35,000 (min)
Operating Pressure:	4.7Nm	4.7N (typ)
Rear Nut Fixing Torque:	0.57Nm	0.57Nm
Materials Mouldings:	Glass Filled Nylon	Glass Filled Nylon
Tags/Terminations:	Brass, Tin Plated	Brass, Tin Plated
Switch Body & Button:	Stainless Steel	Stainless Steel
Contacts:	Fine Silver	Fine Silver
Thread size:	M27 x 1.0-6H	M27 x 1.0-6H
<b>RoHS</b>	Compliant	Compliant

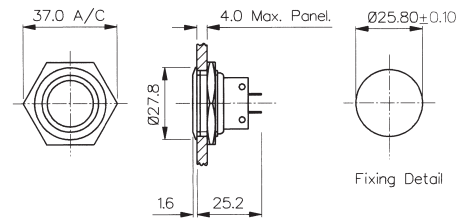


## Front Panel Mounting



MP0027/3

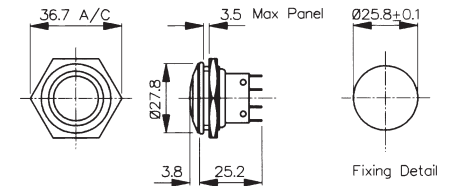
- 28mm diameter
- Domed Profile
- S.P.C.O. Microswitch
- 5A, 250Vac



## Front Panel Mounting

MP0038/3  
Sealed to IP66

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

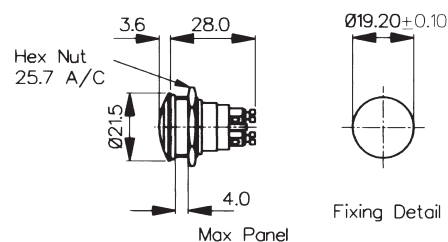


Specifications	MP0027/3	MP0038/3
Terminations:	Solder Tags	Solder Tags
Switching:	S.P.C.O. Momentary Action (Microswitch)	S.P.C.O. Momentary Action (Microswitch)
Max. Rating:	5A, 250Vac. 2A, 28Vdc	5A, 250Vac. 2A, 28Vdc
Contact Resistance:	<10mΩ	<10mΩ
Insulation Resistance:	>10 <sup>9</sup> MΩ	>10 <sup>9</sup> 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:	1,000,000 (min)	1,000,000 (min)
Electrical:	35,000 (min)	35,000 (min)
Operating Pressure:	7.5N (typ)	12.5N (typ)
Rear Nut Fixing Torque:	2.5Nm	1.13Nm
Materials		
Mouldings:	Glass Filled Nylon	Glass Filled Nylon
Tags/Terminations:	Brass, Tin Plated	Brass, Tin Plated
Switch Body & Button:	Stainless Steel	Stainless Steel
Contacts:	Fine Silver	Fine Silver
Thread size:	1.0" x 26TPI	0.747" x 26TPI
<b>RoHS</b>	Compliant	Compliant

## Front Panel Mounting


**MP0037/3**  
 Sealed to IP68

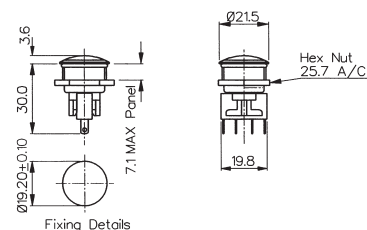
- Front Panel Sealed to IP68
- 21.5mm diameter
- Domed Profile
- S.P. Push to Make
- 1A, 50Vac/dc



## Front Panel Mounting


**MP0031/3**  
 Sealed to IP66

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



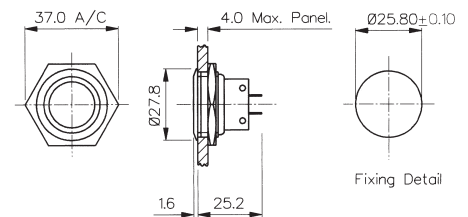
Specifications	MP0037/3	MP0031/3
Terminations:	Screw Terminals	Solder Tags
Switching:	S.P. Push to make Momentary action	S.P.C.O. Momentary Action (Microswitch)
Max. Rating:	1A, 50Vac/dc	5A, 250Vac. 2A, 28Vdc
Contact Resistance:	<10mΩ	<10mΩ
Insulation Resistance:	>10 <sup>5</sup> MΩ	>10 <sup>3</sup> 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:	1,000,000 (min)	1,000,000 (min)
Electrical:	35,000 (min)	35,000 (min)
Operating Pressure:	7.5N (typ)	4.7N (typ)
Rear Nut Fixing Torque:	2.5Nm	0.57Nm
Materials		
Mouldings:	Glass Filled Nylon	Glass Filled Nylon
Tags/Terminations:	Brass, Tin Plated	Brass, Tin Plated
Switch Body & Button:	Stainless Steel	Stainless Steel
Contacts:	Brass, Silver Plated, Silver	Fine Silver
Thread size:	0.747" x 26TPI	0.747" x 26TPI
<b>RoHS</b>	Compliant	Compliant

## Front Panel Mounting



MP0027/2

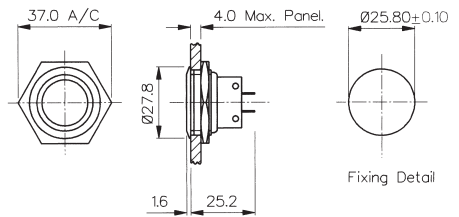
- 28mm diameter
- Prominent Button
- S.P.C.O. Microswitch
- 5A, 250Vac



## Front Panel Mounting

MP0038/2  
Sealed to IP66

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

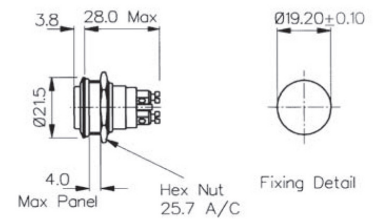


Specifications	MP0027/2	MP0038/2
Terminations:	Solder Tags	Solder Tags
Switching:	S.P.C.O. Momentary Action (Microswitch)	S.P.C.O. Momentary Action (Microswitch)
Max. Rating:	5A, 250Vac 2A, 28Vdc	5A, 250Vac. 2A, 28Vdc
Contact Resistance:	<10mΩ	<10mΩ
Insulation Resistance:	>10 <sup>3</sup> MΩ	>10 <sup>3</sup> 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:	1,000,000 (min)	1,000,000 (min)
Electrical:	35,000 (min)	35,000 (min)
Operating Pressure:	7.5N (typ)	12.5N (typ)
Rear Nut Fixing Torque:	2.5Nm	1.13Nm
Materials		
Mouldings:	Glass Filled Nylon	Glass Filled Nylon
Tags/Terminations:	Brass, Tin Plated	Brass, Tin Plated
Switch Body & Button:	Stainless Steel	Stainless Steel
Contacts:	Fine Silver	Fine Silver
Thread size:	1.0" x 26TPI	1.0" x 26TPI
<b>RoHS</b>	Compliant	Compliant

## Front Panel Mounting


**MP0037/2**  
 Sealed to IP68

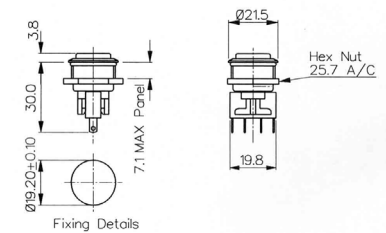
- Front Panel Sealed to IP68
- 21.5mm diameter
- Prominent Button
- S.P. Push to Make
- 1A, 50Vac/dc



## Front Panel Mounting


**MP0031/2**  
 Sealed to IP66

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



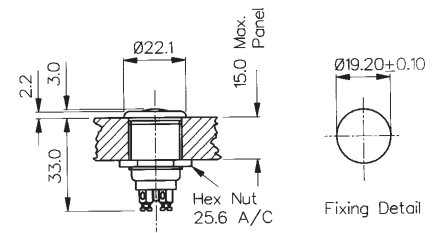
Specifications	MP0037/2	MP0031/2
Terminations:	Screw Terminals	Solder Tags
Switching:	S.P. Push to make Slow momentary action	S.P.C.O. Momentary Action (Microswitch)
Max. Rating:	1A, 50Vac/dc	5A, 250Vac. 2A, 28Vdc
Contact Resistance:	<10mΩ	<10mΩ
Insulation Resistance:	>10 <sup>5</sup> MΩ	>10 <sup>3</sup> 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:	1,000,000 (min)	1,000,000 (min)
Electrical:	35,000 (min)	35,000 (min)
Operating Pressure:	7.5N (typ)	4.7N (typ)
Rear Nut Fixing Torque:	0.57Nm	0.57Nm
Materials Mouldings:	Glass Filled Nylon	Glass Filled Nylon
Tags/Terminations:	Brass, Tin Plated	Brass, Tin Plated
Switch Body & Button:	Stainless Steel	Stainless Steel
Contacts:	Brass, Silver Plated, Silver	Fine Silver
Thread size:	0.747" x 26TPI	0.747" x 26TPI
<b>RoHS</b>	Compliant	Compliant

Front Panel Mounting



MP0013  
MP0033

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

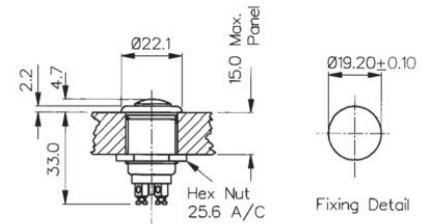


Front Panel Mounting



MP0013/2  
MP0033/2

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



Specifications	MP0013, MP0033	MP0013/2, MP0033/2
Terminations:	Screw Terminals	Screw Terminals
Switching:	S.P. Push to make Slow momentary action	S.P. Push to make Slow momentary action
Max. Rating:	1A, 50Vac/dc	1A, 50Vac/dc
Contact Resistance:	<15mΩ	<15mΩ
Insulation Resistance:	>10 <sup>4</sup> MΩ	>10 <sup>4</sup> MΩ
Dielectric Strength:	>2.5kVac	>2.5kVac
Operating Temp. Range:	-20°C to +85°C	-20°C to +85°C
Sealing (Front of panel only):	MP0033 only - internally sealed against ingress of water and dust	MP0033/2 only - internally sealed against ingress of water and dust
Materials		
Mouldings:	Glass Filled Nylon	Glass Filled Nylon
Tags/Terminations:	Brass, Silver Plated	Brass, Silver Plated
Switch Body & Button:	Body: Brass, Chrome Plated Button: Stainless Steel	Body: Brass, Chrome Plated Button: Stainless Steel
Contacts:	Copper, Silver Plated	Copper, Silver Plated
Thread Size:	0.747" x 26TPI	0.747" x 26TPI
<b>RoHS</b>	Compliant	Compliant

Switches  
Stainless Steel - Momentary

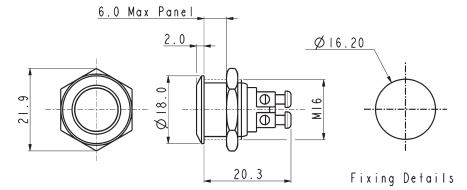


Flush Profile



MP0042/1

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

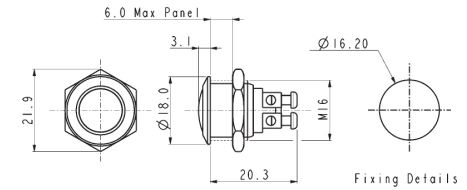


Domed Profile



MP0042/2

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

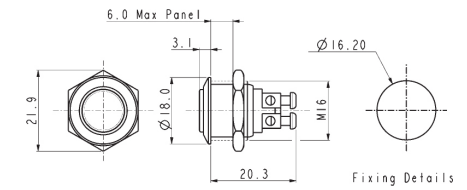


Prominent Button



MP0042/3

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



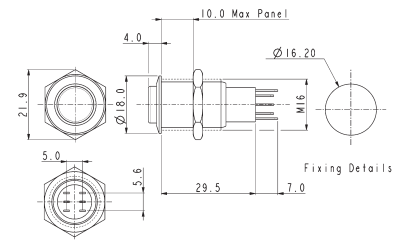
Specifications	MP0042/1	MP0042/2	MP0042/3
Terminations:	Screw Terminals	Screw Terminals	Screw Terminals
Switching:	S.P. Push to make	S.P. Push to make	S.P. Push to make
Max. Rating:	2A, 48Vdc	2A, 48Vdc	2A, 48Vdc
Contact Resistance:	50mΩ at 1A, 2V	50mΩ at 1A, 2V	50mΩ at 1A, 2V
Insulation Resistance:	>10 <sup>3</sup> MΩ @ 500Vdc	>10 <sup>3</sup> MΩ @ 500Vdc	>10 <sup>3</sup> 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:	1,000,000 (min)	1,000,000 (min)	1,000,000 (min)
Electrical:	100,000 (min)	100,000 (min)	100,000 (min)
Rear Nut Fixing Torque:	12Nm	12Nm	12Nm
Materials			
Mouldings:	Nylon	Nylon	Nylon
Tags/Terminations:	Brass, Silver Plated	Brass, Silver Plated	Brass, Silver Plated
Switch Body & Button:	Stainless Steel (Polished)	Stainless Steel (Polished)	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

Low Profile



MP0045/1D

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

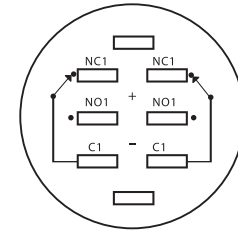
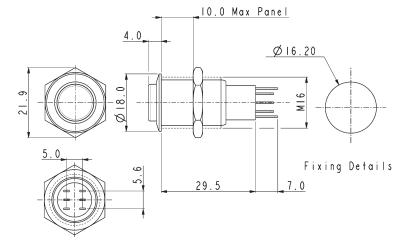


Prominent Button



MP0045/3D

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



Contact Layout

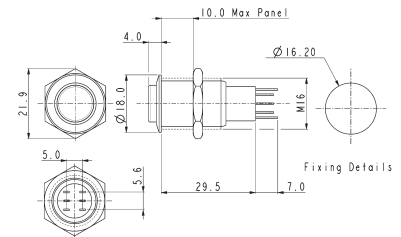
Specifications	MP0045/1D0NN000	MP0045/3D0NN000
Terminations:	Solder tags	Solder tags
Switching:	D.P.C.O Momentary Action	D.P.C.O Momentary Action
Max. Rating:	250V ac	250V ac
Contact Resistance:	50mΩ max. @ 1A, 2V	50mΩ max. @ 1A, 2V
Insulation Resistance:	>10 <sup>3</sup> MΩ @ 500Vdc	>10 <sup>3</sup> MΩ @ 500Vdc
Dielectric Strength:	> 2.0kVac	> 2.0kVac
Operating Temp. Range:	-20°C to +55°C	-20°C to +55°C
Operations		
Mechanical:	200,000 (min)	200,000 (min)
Electrical:	30,000 (min)	30,000 (min)
Rear Nut Fixing Torque:	12Nm	12Nm
Materials		
Mouldings:	Nylon	Nylon
Tags/Terminations:	Brass, Silver Plated	Brass, Silver Plated
Switch Body & Button:	Stainless Steel	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

Low Profile



MP0045/1E

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

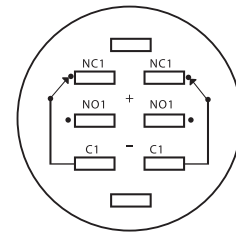
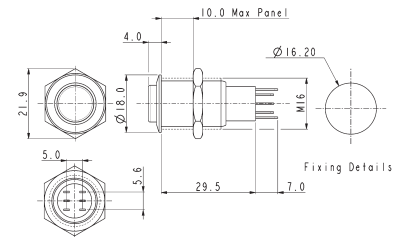


Prominent Button



MP0045/3E

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



Contact Layout

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 <sup>3</sup> MΩ @ 500Vdc	>10 <sup>3</sup> MΩ @ 500Vdc
Dielectric Strength:	>2.0kVac	>2.0kVac
Operating Temp. Range:	-20°C to +55°C	-20°C to +55°C
Operations		
Mechanical:	200,000 (min)	200,000 (min)
Electrical:	30,000 (min)	30,000 (min)
Rear Nut Fixing Torque:	12Nm	12Nm
Materials		
Mouldings:	Nylon	Nylon
Tags/Terminations:	Brass, Tin Plated	Brass, Tin Plated
Switch Body & Button:	Stainless Steel (Polished)	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

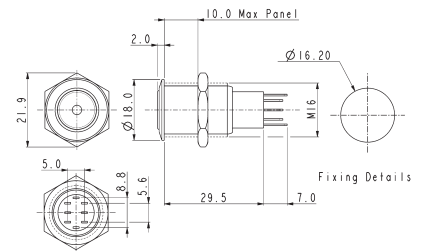


## Front Panel Mounting



MP0045/1D1

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

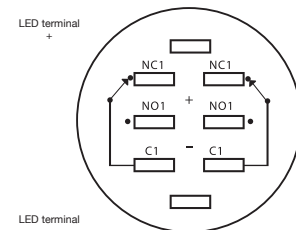
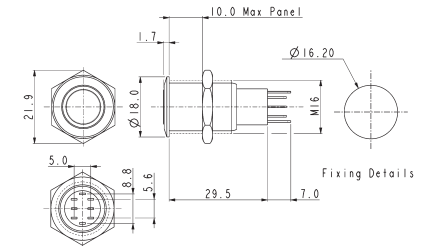


## Front Panel Mounting



MP0045/1D2

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



Contact Layout

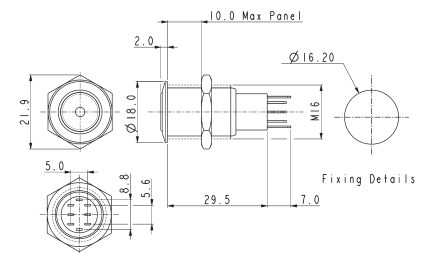
Specifications	MP0045/1D1/Colour/Voltage	MP0045/1D2/Colour/Voltage
Terminations:	Solder Tags	Solder Tags
Illumination:	Dot	Ring
Switching:	D.P.C.O. Momentary Action	D.P.C.O. Momentary Action
Max. Switch Rating:	3A, 250Vac	3A, 250Vac
LEDs		
Colours	Red Green Amber Blue	Red Green Amber Blue
Part No.	/RD /GN /AM /BL	/RD /GN /AM /BL
Voltage	12Vdc 220Vdc	12Vdc 220Vdc
Part No.	/012 /220	/012 /220
Contact Resistance:	50mΩ max. @ 1A, 2Vdc	50mΩ max. @ 1A, 2Vdc
Insulation Resistance:	>10 <sup>3</sup> MΩ @ 500Vac	>10 <sup>3</sup> MΩ @ 500Vac
Dielectric Strength:	>2.0kVac	>2.0kVac
Operating Temp. Range:	-20°C to +55°C	-20°C to +55°C
Operations		
Mechanical:	200,000 (min)	200,000 (min)
Electrical:	30,000 (min)	30,000 (min)
Rear Nut Fixing Torque:	12Nm	12Nm
Materials		
Mouldings:	Nylon	Nylon
Tags:	Brass, Silver Plated	Brass, Silver Plated
Switch Body & Button:	Stainless Steel (Polished)	Stainless Steel (Polished)
Variants	Prominent Button, details on request	Prominent Button, details on request
<b>RoHS</b>	Compliant	Compliant

## Front Panel Mounting



MP0045/1E1

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

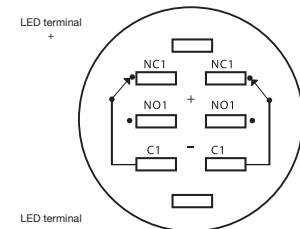
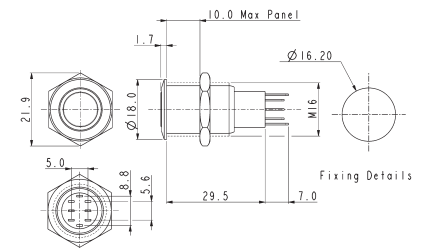


## Front Panel Mounting



MP0045/1E2

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



Contact Layout

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	Red    Green    Amber    Blue	Red    Green    Amber    Blue
Part No.	/RD    /GN    /AM    /BL	/RD    /GN    /AM    /BL
Voltage	12Vdc    220Vdc	12Vdc    220Vdc
Part No.	/012    /220	/012    /220
Contact Resistance:	50mΩ max. @ 1A, 2Vdc	50mΩ max. @ 1A, 2Vdc
Insulation Resistance:	>10 <sup>3</sup> MΩ @ 500Vac	>10 <sup>3</sup> MΩ @ 500Vac
Dielectric Strength:	>2.0kVac	>2.0kVac
Operating Temp. Range:	-20°C to +55°C	-20°C to +55°C
Operations		
Mechanical:	200,000 (min)	200,000 (min)
Electrical:	30,000 (min)	30,000 (min)
Rear Nut Fixing Torque:	12Nm	12Nm
Materials		
Mouldings:	Nylon	Nylon
Tags:	Brass, Silver Plated	Brass, Silver Plated
Switch Body & Button:	Stainless Steel (Polished)	Stainless Steel (Polished)
Variants	Prominent Button, details on request	Prominent Button, details on request
<b>RoHS</b>	Compliant	Compliant

# Switches 8300 Vandal Resistant Switches

Designed to IP66



H8300RP - - -

## Key Features

- Momentary or latching action
- Ratings up to 12(12) @ 250Vac
- 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)

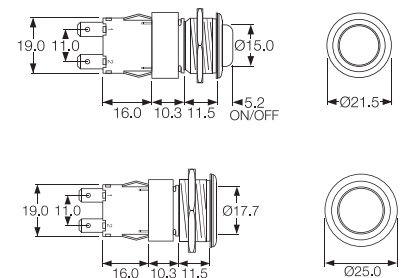
12A 250Vac DP, 13A 250Vac SP  
 250Vac 1hp, 125Vac 1/2hp  
 UL 85°C, file E45221, CSA file LR10990

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
<b>C</b>  <b>H</b> 	<b>8300</b> (alternate) Single pole ON - OFF 	<b>R</b> (for P body only) Raised top (stainless steel) 	
<b>K</b>  <b>T</b> 	<b>8301</b> (momentary ON) Single pole ON - OFF 	<b>V</b> Flat top (stainless steel) 	<b>P</b> (for R actuator only) Stainless steel, Soft profile bezel 
<b>V</b>  <b>X</b> 	<b>8301</b> (momentary ON) Single pole ON - OFF 	<b>P</b> Domed top (stainless steel) 	<b>M</b> Stainless steel 

Switches  
**0911 Vandal Resistant Switches**

Designed to IP66



C0911VA - - -

**Key Features**

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

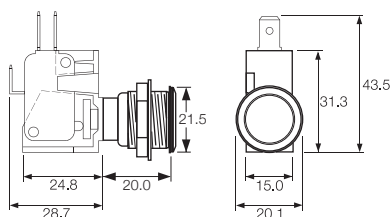
**Approvals and specifications**

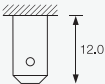



- ⚡ 16(4)A 250Vac 5E4 T85
- UL Ⓢ 16A 125/250Vac 3/4hp T85 50E3  
 125V 1/2 HP, 250V 3/4 HP, 0.4A 125Vdc, 0.2A 250Vdc

Approvals apply to switch mechanism only.  
 μ contact gap.

**Dimensions**

C0911VA



Terminal	Function	Actuator	Body Code
	<p><b>0911</b>                      (momentary)                      ON - ON</p> 	<p><b>V</b> Flat top (stainless steel)</p> 	<p><b>A</b></p> <p>Stainless steel                      Chamfer profile bezel</p>  <p>Panel cut-out                      Panel thickness up to 8.0mm</p>

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

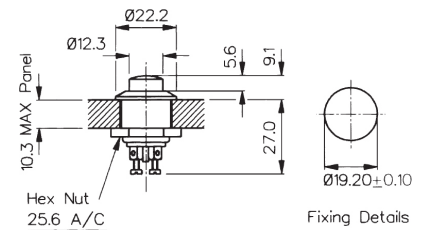


Front Panel Mounting



MP0012/Col

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

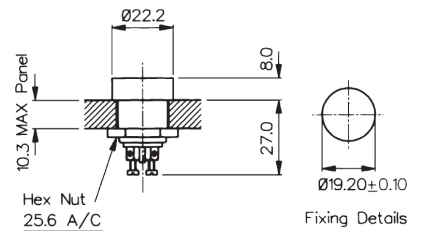


Front Panel Mounting



MP0012/1/Col

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

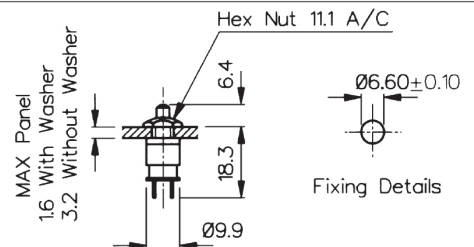


Rear Panel Mounting



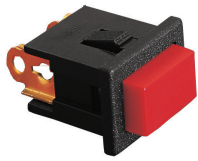
MP0016

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



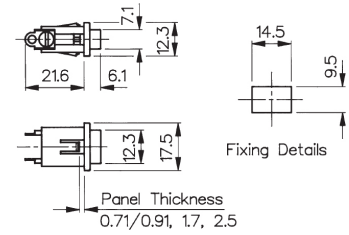
Specifications	MP0012/Colour	MP0012/1/Colour	MP0016/Colour
Terminations:	Screw Terminals	Screw Terminals	Solder Tags
Switching:	S.P. Push to Make Slow Momentary Action	S.P. Push to Make Slow Momentary Action	S.P. Push to Make Slow Momentary Action
Max. Rating:	0.25A. 250Vac, 1A. 110Vac, 2A. 12Vac/dc	0.25A. 250Vac, 1A. 110Vac, 2A. 12Vac/dc	1A 28Vac/dc (non-inductive)
Contact Resistance:	<15mΩ	<15mΩ	<15mΩ
Insulation Resistance:	>10 <sup>4</sup> MΩ	>10 <sup>4</sup> MΩ	>10 <sup>4</sup> MΩ
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:	Glass Filled Nylon Brass,	Glass Filled Nylon Brass,	Glass Filled Nylon Brass,
Body:	Brass, Chrome Plated	Brass, Chrome Plated	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

Front Panel Mounting



MP0022/Col

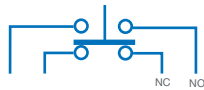
- S.P. Push to Make
- Solder Tags
- Nylon Body & Button



Switch Contact Operation



S.P. Push to Make S.P.M.B.



S.P.C.O.



D.P.C.O.



D.P.M.B.

**Specifications** **MP0022/Colour**

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:	<15mΩ
Insulation Resistance:	>10 <sup>4</sup> MΩ
Dielectric Strength:	>2.5kVac
Operating Temp. Range:	-20°C to +70°C
Sealing:	
Materials	
Moulding:	Nylon
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
- 8A Inductive current rating
- Ratings up to 12(12)A, 250V ac (H suffix)
- Illuminated and nonilluminated
- Single and double pole
- Latching and momentary
- Slotted actuator for custom buttons
- Industry standard panel cutout
- BioCote antimicrobial option
- 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)

8350, 8351, 8353, 8354  
 12A 250Vac DR, 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.

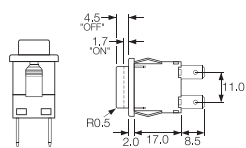
3mm contact gap.

Terminal	Function	Actuator	Body Code	Body Colour								
<b>C</b>  6.3 x 0.8 10.1	 Approvals & ratings vary with function Single pole switches use terminals 1 & 2 (& 3)		Panel cut-out ** Bezel									
	<b>8300</b> Single Pole ON - OFF 	<b>A</b> Standard actuator 	<b>B</b> Standard body  12.9 21.0	<b>B</b> Black  <b>W</b> White								
	<b>8301</b> Single Pole ON - OFF (momentary ON) 	<b>H</b> Slotted for custom caps 										
<b>H</b>  4.8 x 0.8 8.5		<b>A</b>  7.6 As "H" but right angle 4.8 x 0.8										
	<b>8303</b> Single Pole ON - OFF With Light 	<b>C</b> Square actuator 	<b>E</b> Softline style body with radiused bezel  12.9 21.0  Cut-outs must be punched in the direction of insertion									
	<b>8304</b> Single Pole ON - OFF (momentary ON) with light 	<b>E</b> Radiused actuator 	<b>Dimensions for snap-in fixing</b> <table border="1"> <thead> <tr> <th>Panel thickness</th> <th>Dimension X</th> </tr> </thead> <tbody> <tr> <td>0.75-1.24</td> <td>19.1/19.2</td> </tr> <tr> <td>1.25-1.99</td> <td>19.3/19.4</td> </tr> <tr> <td>2.00-3.00</td> <td>19.7/19.8</td> </tr> </tbody> </table>	Panel thickness	Dimension X	0.75-1.24	19.1/19.2	1.25-1.99	19.3/19.4	2.00-3.00	19.7/19.8	
Panel thickness	Dimension X											
0.75-1.24	19.1/19.2											
1.25-1.99	19.3/19.4											
2.00-3.00	19.7/19.8											
	<b>8350</b> Double pole ON - OFF 	<b>F</b> Small round actuator 										
<b>K</b>  2.6 1.5 2.8 x 0.8 8.5		<b>J</b> Smooth curved actuator 										
	<b>8351</b> Double pole ON - OFF (momentary ON) 											
	<b>8353</b> Double pole ON - OFF With light 											
<b>T</b>  2.6 1.5 7.0 7.0 Solder		<b>M</b> 										
	<b>8354</b> Double pole ON - OFF (momentary ON) with light 											
	<b>8355</b> Single pole ON - OFF Isolated light - switched C, E & M actuators only 	<b>D</b> Large round actuator 										
<b>X</b>  4.5 7.0 7.0 PCB 0.8 Sq												
	<b>V</b>  3.7 4.3 4.3 Dual pin PCB (Call sales for mounting dims)											
	<b>8356</b> Single pole ON - OFF Isolated light - unswitched C, E & M actuators only 	All actuators except H available lit										

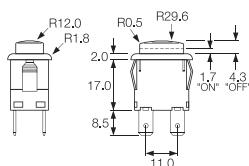


## Dimensions

Actuator A  
Body B



Actuator J  
Body E



## Examples



☐ H8350AB ---  
☐ T8350AB ---




☐ H8353JE ---  
☐ T8353JE ---



☐ H8353EB ---  
☐ T8353EB ---

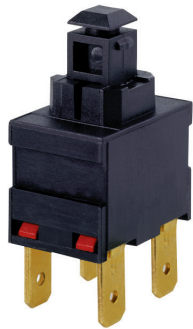


☐ H8353CB ---  
☐ T8353CB ---

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

# 8200 Series Push Button

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



## Key Features

- ⬡ Miniature push button
- ⬡ 8A Inductive current rating
- ⬡ Ratings up to 12(12)A, 250V ac (H suffix)
- ⬡ Without button
- ⬡ Sub panel mount
- ⬡ Push on, solder or PCB terminals
- ⬡ Latching and momentary

## 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)

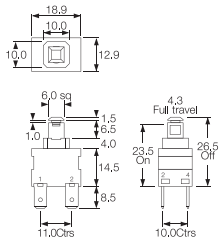
12A 250Vac  
250Vac 1hp, 125Vac 1/2hp  
UL 85°C, file E45221, CSA file LR10990

3mm contact gap.

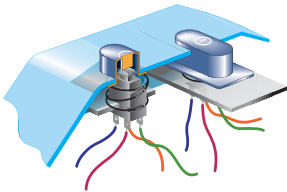
Terminal	Function	Actuator	Body Code
<p><b>C</b></p> <p>6.3 x 0.8 10.1</p>	<p>Approvals &amp; ratings vary with function Single pole switches use terminals 1 &amp; 2 (&amp; 3)</p> <p><b>8200</b> Single Pole ON - OFF</p>	<p><b>A</b> Standard actuator for snap-on custom adaptors</p> <p>8.0</p>	<p><b>A</b> Standard body</p> <p>See dimensioned drawings for details</p>
<p><b>H</b></p> <p>4.8 x 0.8 8.5</p> <p><b>A</b></p> <p>7.6 7.6 As "H" but right angle 4.8 x 0.8</p>	<p><b>8201</b> Single Pole ON - OFF (momentary ON)</p>	<p><b>B</b> Flat top actuator</p> <p>5.5</p>	<p><b>C</b> As standard body but with side support peg for use with M PCB terminals</p> <p>X and V PCB terminals. Additional dummy terminals may be supplied for extra support.</p>
<p><b>K</b></p> <p>2.8 x 0.8 8.5 2.6 1.5</p>	<p><b>8250</b> Double Pole ON - OFF</p>	<p><b>C</b> Curved top actuator</p> <p>8.0</p> <p>Examples of possible actuation methods Using a Snap on adaptor</p>	<p><b>V</b></p> <p>4.3 3.7 Ctrs Dual pin PCB (Call sales for mounting dims)</p>
<p><b>T</b></p> <p>2.6 7.0 1.5 Solder</p>	<p><b>8251</b> Double Pole ON - OFF (momentary ON)</p>	<p>Using a Hinged Actuator</p>	
<p><b>X</b></p> <p>4.5 7.0 PCB 0.8 Sq</p>			

## Dimensions

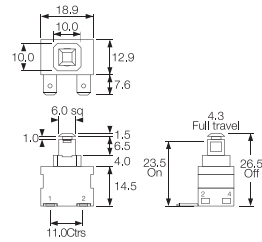
'A' body with 'H' 4.8 terminals



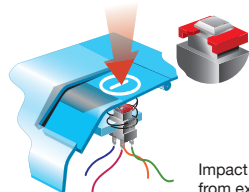
Example of possible mounting styles



'A' body with 'A' right angle 4.8 terminals

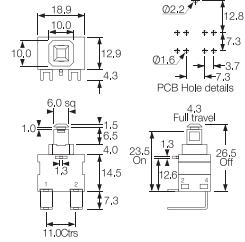


Alternative Actuator



Impact washer resists damage from excessive operator force

'C' body with 'M' right angle PCB terminals



## Examples



C8250AA --- with impact washer M1226



X8201AA ---



K8200AA ---



A8200AA ---



M8200AC ---



Example of M8200AC

# 7000 Series Push Button

16A 250Vac



## Key Features

- Round and rectangular push button switches
- Ratings up to 16A, 250V ac
- Latching and momentary
- Illuminated & non-illuminated
- Matching indicators
- Low profile version
- Panel cut outs: 25.0 dia 27.2 x 22.3

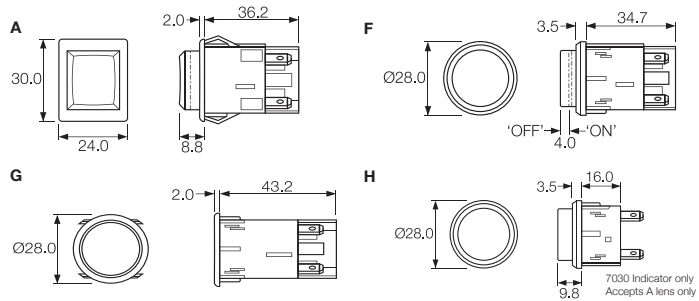
## Approvals and specifications

- CE 16(4)A 250Vac T125  
8(8)A 250Vac T85
- UL CSA 16A Non Ind, 250Vac 1hp, 125Vac 1/2hp  
UL 65°C, file no. E45221, CSA file no. LR10990  
3mm contact gap.

Terminal	Function	Actuator	Body Code
<p><b>C</b></p> <p>6.3 x 0.8</p> <p><b>H</b></p> <p>4.8 x 0.8</p>	<p>1 2 3 4 Approvals &amp; ratings vary with function Single pole switches use terminals 1 &amp; 2 (&amp; 3)</p> <p><b>7000</b> Single Pole ON - OFF</p> <p><b>7001</b> Single Pole (momentary) ON - OFF</p> <p><b>7003</b> Single Pole (with light) ON - OFF</p> <p><b>7004</b> Single Pole (momentary) with light ON - OFF</p> <p><b>7050</b> Double Pole ON - OFF</p> <p><b>7051</b> Double Pole with light ON - OFF</p> <p><b>7053</b> Double pole with light ON - OFF</p> <p><b>7054</b> Double pole (momentary ON) with light ON - OFF</p> <p><b>7030</b> Indicator UL E63363 CSA LR29381</p>	<p><b>A</b> Round actuator shown in F body</p> <p><b>A</b> Round actuator shown in G body</p> <p><b>B</b> Round actuator - medium shown in F body</p> <p><b>C</b> Round actuator - long shown in F body</p> <p><b>D</b> Round actuator - sub panel mount</p> <p><b>S</b> Rectangular actuator Shown in "A" body N/A for 7030</p>	<p>Panel cut-outs</p> <p><b>F H G</b></p> <p>Body types fit either cut-out</p> <p><b>A</b></p> <p>Cut-outs must be punched in the direction of insertion</p>

## Dimensions

Panel thickness:  
**A** - 0.8 - 2.5mm  
**F, G, H** - 0.8 - 5.0mm



## Examples



C7000AF ---



C7003AF ---



C7050SA ---



C7053AG ---

Body Colour	Actuator Colour	Lamp Voltage	Legend	Legend Colour	Options
<b>B</b> Black	<b>A</b> Amber	— None			<p><b>Finish</b>            Matt finish is standard on bodies.            Gloss finish is standard on actuators.</p> <p><b>Colour</b>            Call sales for custom colours.            A full range is available for large orders.</p> <p><b>Legend printing</b>            A wide range is available or call sales for custom legends.</p> <p><b>Lamp voltage</b>            Call sales for details of available voltages.</p> <p><b>Weatherproof housing (E)</b>            Additional housing which fits round body switches with an oversize housing with a clear silicone cover designed to IP65.            Mounting hole dia: 38.0mm</p>
<b>W</b> White	<b>C</b> Clear	<b>2</b> 125V Neon			
	<b>G</b> Green	<b>3</b> 250V Neon			
	<b>R</b> Red	<b>7</b> 12V Filament			
		<b>8</b> 24V Filament			
	UNLIT				
	<b>B</b> Black				
	<b>R</b> Red				
	<b>W</b> White				

# 0911 Push Button Switches

0.5A 250Vac



## Key Features

- Snap action switches
- Ratings up to 16A, 250Vac
- Round and rectangular buttons

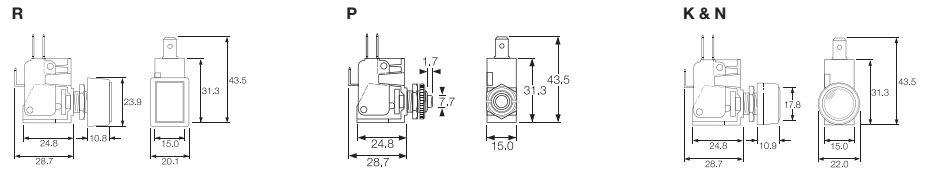
## Approvals and specifications

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 250Vdc

Approvals apply to switch mechanism only.  
μ contact gap.

## Dimensions



Terminal	Function	Actuator	Body Code	Options
	<p><b>0911</b> (momentary) ON - ON</p>	<p><b>R</b> Rectangular bezel</p> <p><b>P</b> Short</p> <p><b>K</b> with satin chrome bezel</p> <p><b>N</b> with nylon bezel</p>	<p>Panel Cut-out</p> <p>Panel thickness Both nuts 2.5mm No backnut 4.0mm</p>	<p>Call factory for custom colours</p>

# 0916 - 0920 Push Button Switches

0.5A 250Vac



## Key Features

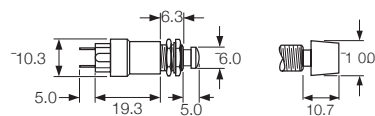
- Self wiping contacts
- Slow make & break
- Momentary action
- Choice of switch circuits
- Choice of actuators

## Approvals and specifications

In house test:  
0.5A 250Vac T85 – Indicative rating only

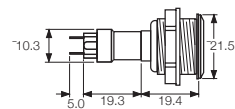
## Dimensions

Dimensions (mm) Nylon S and L actuators



Neck thread - 40 TPI Whit. Actuator travel - 2.5 max

Stainless steel V actuator (IP66)



Neck thread - 26 TPI Whit. Actuator travel - 2.5 max

Terminal	Function	Actuator	Body Code	Options
<p><b>T</b></p> <p>Solder</p>	<p><b>0916</b></p> <p>Black base SP ON - OFF (momentary)</p>	<p><b>S</b> Small Actuator</p>	<p>7.1</p> <p>Panel Cut-out (L &amp; S Actuators)</p>	<p>Finish</p> <p>Gloss finish for L and S actuators.</p>
	<p><b>0917</b> 50V only</p> <p>Brown base SP ON - OFF (momentary 1 side)</p>	<p><b>L</b> Large Actuator</p>	<p>Panel thickness Both nuts - 2.5mm No Backnut - 4.0</p>	<p>Colour</p> <p>Call sales for custom colours. A full range is available for large orders.</p>
	<p><b>0918</b></p> <p>White base SP ON - OFF (momentary OFF)</p>	<p><b>V</b> Vandal Resistant IP66 Flattop Stainless Steel</p>	<p>19.2</p> <p>Panel Cut-out (Stainless Steel V Actuator) Panel thickness - 8.0mm</p>	
	<p><b>0919</b></p> <p>Black base DP ON - OFF (momentary 1 side)</p>			
	<p><b>0920</b></p> <p>White base DP ON - OFF (momentary ON)</p>			

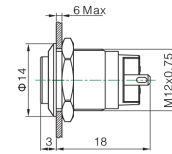
MAV0120



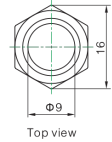
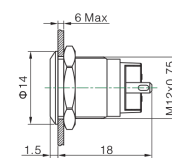
MAV0120

- Prominent and Flush Profile
- 12mm Diameter
- 2A, 36 dc
- IP67 (Front of Panel Only)

Prominent Profile



Flush Profile



**Specification**

**MAV0120/3**

**MAV0120/1**

Terminations:	P - Solder Tabs	P - Solder Tabs
Switching:	S.P. Push to make	S.P. Push to make
Max Rating:	2A, 36Vdc	2A, 36Vdc
Contact Resistance:	≥50MΩ	≥50MΩ
Insulation Resistance:	≥1000MΩ	≥1000MΩ
Dielectric Strength:	1500V, AC 50Hz, 5 Secs	1500V, AC 50Hz, 5 Secs
Operating Temp Range:	*-25°C ~ +55°C	*-25°C ~ +55°C
<b>Operations</b>		
Mechanical:	500,000 (min)	500,000 (min)
Electrical:	200,000 (min)	200,000 (min)
Sealing (Front of Panel Only)	IP67	IP67
Shock Resistance	IK08	IK08
Rear Nut Fixing Torque:	0.6Nm	0.6Nm
<b>Materials</b>		
Mouldings:	PA	PA
Tags/Terminations:	Copper, Gold Plated	Copper, Gold Plated
Switch Body & Button:	Stainless Steel	Stainless Steel
Contacts:	Silver Alloy	Silver Alloy
Thread size:	M12x0.75	M12x0.75
RoHS	Compliant	Compliant



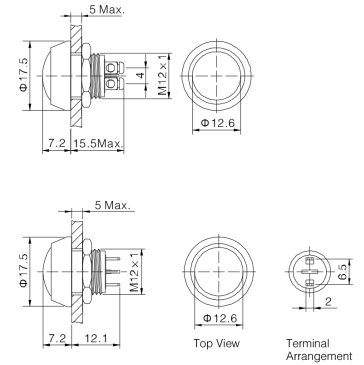


MMP0120



MMP0120

- Raised Domed Profile
- 12mm Diameter
- 2A, 36Vac
- IP65 or IP67 (Front of Panel Only)



## Specification

### MMP0120/S

### MMP0120/N

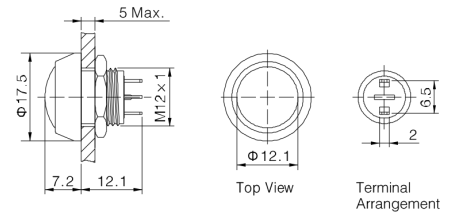
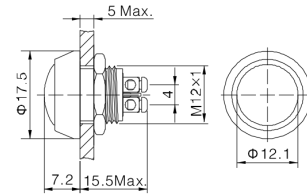
Terminations:	P - Solder Tabs S - Screw Terminal	P - Solder Tabs S - Screw Terminal
Switching:	S.P. Push to make	S.P. Push to make
Max Rating:	2A, 36Vdc	2A, 36Vdc
Contact Resistance:	$\geq 50M\Omega$	$\geq 50M\Omega$
Insulation Resistance:	$\geq 1000M\Omega$	$\geq 1000M\Omega$
Dielectric Strength:	1500V, AC 50Hz, 5 Secs	1500V, AC 50Hz, 5 Secs
Operating Temp Range:	*-25°C ~ +55°C	*-25°C ~ +55°C
<b>Operations</b>		
Mechanical:	500,000 (min)	500,000 (min)
Electrical:	200,000 (min)	200,000 (min)
Sealing (Front of Panel Only)	IP65 or IP67	IP65 or IP67
Shock Resistance	IK08	IK08
Rear Nut Fixing Torque:	0.3Nm	0.3Nm
<b>Materials</b>		
Mouldings:	PBT	PBT
Tags/Terminations:	Brass, Silver Plated	Brass, Silver Plated
Switch Body & Button:	/SS Stainless Steel	/N - Nickel Plated Brass
Contacts:	Silver Alloy	Silver Alloy
Thread size:	M12x1	M12x1
RoHS	Compliant	Compliant

MMP0120/A



MMP0120/A

- Raised Domed Profile
- PBT Material
- 12mm Diameter
- 2A, 36Vac
- IP65 or IP67 (Front of Panel Only)



## Specification

## MMP0120/A

Terminations:	P - Solder Tabs
Switching:	S.P. Push to make
Max Rating:	2A, 36Vdc
Contact Resistance:	≥50MΩ
Insulation Resistance:	≥1000MΩ
Dielectric Strength:	1500V, AC 50Hz, 5 Secs
Operating Temp Range:	*-25°C ~ +55°C
<b>Operations</b>	
Mechanical:	1,000,000 (min)
Electrical:	200,000 (min)
Sealing (Front of Panel Only)	IP65 or IP67
Shock Resistance	IK08
Rear Nut Fixing Torque:	0.3Nm
<b>Materials</b>	
Mouldings:	PBT
Tags/Terminations:	Brass, Silver Plated
Switch Body	/A Black Anodised
Switch Button:	/NB Nickel Plated Brass /RD RED PBT /GN GREEN PBT /BL BLUE PBT /BK BLACK PBT
Contacts:	Silver Alloy
Thread size:	M12x1
RoHS	Compliant

12mm Switches  
**Miniature Domed Illuminated Pushbutton**

Stainless Steel and PBT

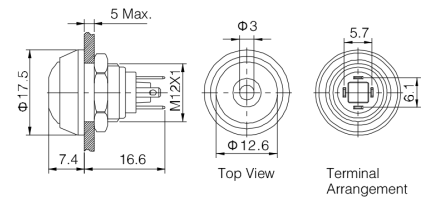


MMPI0120



MMPI0120

- Raised Domed Profile
- Dot Illumination
- Bright daylight LEDs
- 12mm Diameter
- 2A, 36Vac
- IP65 (Front of Panel Only)



**Specification**

**MMPI0120**

Terminations:	P - Solder Tabs				
Switching:	S.P. Push to make				
Max Rating:	2A, 36Vdc				
LED Ratings					
Part No.	SS-RD	SS-GN	NN-RD	ABK-RD	AG-RD
Colours	Red	Green	Red	Red	Red
Luminous Intensity					
Forward Voltage	1.8V	2.8V	1.8V	1.8V	1.8V
Forward Current					
Moulding Current	15mA	15mA	15mA	15mA	15mA
Illumination Voltage	/no suffix - No resistor fitted. An Appropriate resistor must be series connected by the user. Voltages as above				
	/12				
Contact Resistance:	≥50MΩ				
Insulation Resistance:	≥1000MΩ				
Dielectric Strength:	1500V, AC 50Hz, 5 Secs				
Operating Temp. Range:	*-25°C ~ +55°C				
Operations					
Mechanical:	1,000,000 (min)				
Electrical:	200,000 (min)				
Sealing (Front of Panel Only)	IP65				
Shock Resistance	IK08				
Rear Nut Fixing Torque:	0.3Nm				
Materials					
Mouldings:	PBT				
Tags/Terminations:	Brass, Silver Plated				
Switch Body & Button:	Stainless Steel	Stainless Steel	Nickel Plated Brass	Black Anodized Body, Black PBT Button	Black Anodized Body, Green PBT Button
Contacts:	Silver Alloy				
Thread size:	M12x1				
RoHS	Compliant				

**12mm Miniature Vandal Resistant Stainless Steel Switch**

<b>MAV0120</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>Series</b> MAV0120	<b>Button</b> 1 = Flush 3 = Prominent	<b>Switching Type</b> D = Momentary	<b>Type of Illumination</b> Blank = None 1 = Dot 2 = Ring	<b>Illumination Colour</b> Blank = None RD = RED GN = GREEN BL = BLUE AM = AMBER/YELLOW OR = ORANGE	<b>Lamp Voltage</b> Blank = None 012 = 12V 024 = 24V

**Examples:**

MAV0120/3D = 12mm Prominent Actuator, Momentary, Non Illuminated  
 MAV0120/3D1BL024 = 12mm Prominent Actuator, Momentary, Blue Dot Illuminated, 24V  
 MAV0120/3D2GN012 = 12mm Prominent Actuator, Momentary, Green Ring Illuminated, 12V

**12mm Miniature Metal/Plastic Domed Pushbutton Switch**

<b>MMPXXX</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>Series</b> MMP0120 = Non Illuminated  MMP10120 = Illuminated	<b>Body Material</b> S = Stainless Steel N = Nickel Plated Brass A = Black Anodized	<b>Button Material &amp; Colour</b> SS = Nickel Plated Brass RD = RED PBT GN = GREEN PBT BL = BLUE PBT BK = BLACK PBT	<b>Sealing</b> Blank = IP65 67 = IP67 IP67 (non-illuminated only)	<b>Illumination Colour</b> Blank = None RD = RED GN = GREEN BL = BLUE AM = AMBER/YELLOW OR = ORANGE	<b>Lamp Voltage</b> Blank = None 012 = 12V 024 = 24V Other voltages require external resistor	<b>Termination</b> S = Screw Terminals P= Solder Terminals (2.0mm x 0.5mm)

**Examples:**

MMP0120/SSSS = 12mm, Non Illuminated, All Stainless Steel, IP65, Screw Terminals  
 MMP0120/ARD67/S = 12mm, Non Illuminated, Black anodized body, Red PBT button, IP67, screw terminals  
 MMP10120/NNBRD012P = 12mm, Illuminated, All Nickel Plated Brass with 12V Red Dot illumination, IP65, Pin Terminals