

## Switches

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 $6 \mathrm{~V}, 12 \mathrm{~V}$ \& 24 V together with rear of panel sealing, these options will add that extra dimension to control panel layouts and functionality.

The standard range of vandal resistant switches are complemented by a range of 16 mm stainless steel switches of robust construction designed for use in applications where space is at a premium.

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Stainless Steel Low Profile Vandal Resistant - Momentary


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


| Specification | MP0027 | MP0038 | MP0025 |
| :---: | :---: | :---: | :---: |
| Terminations: | Solder Tags | Solder Tags | Solder Tags |
| Switching: | S.P.C.O. Momentary Action (Microswitch) | S.P.C.O. Momentary Action (Microswitch) | S.P.C.O. Momentary Action (Microswitch) |
| Max. Rating: | 5A, 250Vac <br> 2A 28Vdc | 5A, 250Vac <br> 2A, 28Vdc | $5 \mathrm{~A}, 250 \mathrm{Vac}$ <br> 2A, 28Vdc |
| Contact Resistance: | $<10 \mathrm{~m} \Omega$ | $<10 \mathrm{~m} \Omega$ | $<10 \mathrm{~m} \Omega$ |
| Insulation Resistance: | $>10^{3} \mathrm{M} \Omega$ | $>10^{3} \mathrm{M} \Omega$. | $>10^{3} \mathrm{M} \Omega$ |
| Dielectric Strength: | $>2.0 \mathrm{kVac}$ | $>2.0 \mathrm{kVac}$ | $>2.0 \mathrm{kVac}$ |
| Operating Temp. Range: | $-20^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ | $-20^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ | $-20^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ |
| Sealing (Front of panel only): |  | Protection Classification: IP66 EN60529 1992 (Micro switch not sealed) |  |
| Operations |  |  |  |
| Mechanical: | 1,000,000 (min) | 1,000,000 (min) | 1,000,000 (min) |
| Electrical: | 35,000 (min) | 35,000 (min) | 35,000 (min) |
| Operating Pressure: | 7.5 N (typ) | 12.5N (typ) | 6.1 N (typ) |
| Rear Nut Fixing Torque: | 2.5 Nm | 1.13 Nm | - |
| 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: | Stainless Steel | Stainless Steel | Stainless Steel |
| Contacts: | Fine Silver | Fine Silver | Fine Silver |
| Thread size: | $1.0^{\prime \prime} \times 26 \mathrm{TPI}$ | 1.01 $\times 26 \mathrm{TPI}$ | - |
| RoHS | Compliant | Compliant | Compliant |

## Stainless Steel Low Profile Vandal Resistant - Momentary



Stainless Steel Low Profile Vandal Resistant - Latching


- 22 mm diameter
- $2 \mathrm{~A}, 50 \mathrm{Vac} / \mathrm{dc}$
- Single pole push to make
- Latching switch



| Specification | MPL027 | MPL038 | MPL025 |
| :---: | :---: | :---: | :---: |
| Terminations: | Solder Tags | Solder Tags | Solder Tags |
| Switching: | S.P.M.B. - Latching | S.P.M.B. - Latching | S.P.M.B. - Latching |
| Max. Rating: | 2A, 50Vac/dc | 2A, 50Vac/dc | 2A, 50Vac/dc |
| Contact Resistance: | $<10 \mathrm{~m} \Omega$ | $<10 \mathrm{~m} \Omega$ | $<10 \mathrm{~m} \Omega$ |
| Insulation Resistance: | $>10^{3} \mathrm{M} \Omega$ | $>10^{3} \mathrm{M} \Omega$. | $>10^{3} \mathrm{M} \Omega$ |
| Dielectric Strength: | $>2.0 \mathrm{kVac}$ | $>2.0 \mathrm{kVac}$ | $>2.0 \mathrm{kVac}$ |
| Operating Temp. Range: | $-20^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ | $-20^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ | $-20^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ |
| Sealing (Front of panel only): | - | Protection Classification: IP66 EN60529 1992 (Switch not sealed) | - |
| Operations Mechanical: Electrical: | $\begin{aligned} & 8,000(\mathrm{~min}) \\ & 8,000(\mathrm{~min}) \end{aligned}$ | $8,000(\mathrm{~min})$ $8,000(\mathrm{~min})$ | $\begin{aligned} & 8,000(\mathrm{~min}) \\ & 8,000(\mathrm{~min}) \end{aligned}$ |
| Operating Pressure: | 5.5 N (typ) | 5.5 N (typ) | 5.5 N (typ) |
| Rear Nut Fixing Torque: | 2.5 Nm | 1.13 Nm | - |
| Materials <br> Mouldings: <br> Tags/Terminations: Switch Body \& Button: | Glass Filled Nylon Brass, Tin Plated Stainless Steel | Glass Filled Nylon Brass, Tin Plated Stainless Steel | Glass Filled Nylon Brass, Tin Plated Stainless Steel |
| Contacts: | Fine Silver | Fine Silver | Fine Silver |
| Thread size: | $1.0^{\prime \prime} \times 26 \mathrm{TPI}$ | 1.0" $\times 26 \mathrm{TPI}$ | - |
| RoHS | Compliant | Compliant | Compliant |

## Stainless Steel Low Profile Vandal Resistant - Latching



| Specification | MPL031 | MPL034 |  |
| :---: | :---: | :---: | :---: |
| Terminations: | Solder Tags | Solder Tags |  |
| Switching: | S.P.M.B. - Latching | S.P.M.B. - Latching |  |
| Max. Rating: | 2A, 50Vac/dc | 2A, 50Vac/dc |  |
| Contact Resistance: | $<10 \mathrm{~m} \Omega$ | $<10 \mathrm{~m} \Omega$ |  |
| Insulation Resistance: | $>10^{3} \mathrm{M} \Omega$ | $>10^{3} \mathrm{M} \Omega$ |  |
| Dielectric Strength: | $>2.0 \mathrm{kVac}$ | $>2.0 \mathrm{kVac}$ |  |
| Operating Temp. Range: | $-20^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ | $-20^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ |  |
| Sealing (Front of panel only): | Protection Classification: IP66 EN60529 1992 (Switch not sealed) |  |  |
| Operations Mechanical: Electrical: | $\begin{aligned} & 8,000(\mathrm{~min}) \\ & 8,000(\mathrm{~min}) \end{aligned}$ | $\begin{aligned} & 8,000(\mathrm{~min}) \\ & 8,000(\mathrm{~min}) \end{aligned}$ |  |
| Operating Pressure: | 5.5 N (typ) | 5.5 N (typ) |  |
| Rear Nut Fixing Torque: | 0.57 Nm | - |  |
| 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: | $0.747^{\prime \prime} \times 26 \mathrm{TPI}$ |  |  |
| RoHS | Compliant | Compliant |  |

## Stainless Steel Low Profile Vandal Resistant - Momentary - Double Pole



- Front Panel Sealed to IP66
- 21.5 mm diameter
- D.P.C.O. Microswitch
- 3A, 125 Vac




## Stainless Steel Illuminated Vandal Resistant



## Stainless Steel Illuminated Vandal Resistant



- Ring illumination
- 22 mm diameter
- Single pole push to make
- $50 \mathrm{~mA}, 24 \mathrm{Vdc}$ 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




## Stainless Steel Illuminated Vandal Resistant with rear of panel IP66 seal



| Specification | MPI001/Termination/Colour/Voltage |  |  |  | MPI002/Termination/Colour/Voltage |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Illumination style: | Dot |  |  |  | Ring |  |  |  |  |
| Terminations: | /FL (Flying leads) /RP (Solder tags) |  |  |  | /FL (Flying leads) /RP (Solder tags) |  |  |  |  |
| Switching: | Single pole, push to make, tactile (momentary action) |  |  |  | Single pole, push to make, tactile (momentary action) |  |  |  |  |
| Max. Switch Rating: | 50 mA , 24 Vdc |  |  |  | 50 mA , 24 Vdc |  |  |  |  |
| LEDs (ratings @ 20mA) Part No. | /RD /GN | /AM | /BL | /WH | /RD | /GN | /AM | /BL | /WH |
| Colours | Red Green | Amber | Blue | White | Red | Green | Amber | Blue | White |
| Luminous Intensity | 900 mcd 2500 mcd | 900 mcd | 1500 mcd | 900 mcd | 900 mcd | 2500 mcd | 900 mcd | 1500mcd | 900 mcd |
| Forward Voltage | $1.85 \mathrm{~V} \quad 3.5 \mathrm{~V}$ | 2.3 V | 3.5 V | 3.6 V | 1.85 V | 3.5 V | 2.3 V | 3.5 V | 3.6 V |
| Forward Current | $20 \mathrm{~mA} \quad 20 \mathrm{~mA}$ | 20 mA | 20 mA | 20 mA | 20 mA | 20 mA | 20 mA | 20 mA | 20 mA |
| Illumination Voltage: | /no suffix No resistor <br> series conn <br> 16 6 Vdc <br> $/ 12$ 12 Vdc <br> $/ 24$ 24 Vdc | fitted. An cted by th | ppropriat user. Vol | esistor must be es as above. | /no suffix <br> 16 <br> /12 <br> /24 | No resis series co 6 Vdc 12 Vdc 24 Vdc | itted. cted b | propria user. Vo | sistor must be s as above. |
| Contact Resistance: | $<100 \mathrm{~m} \Omega$ |  |  |  | $<100 \mathrm{~m} \Omega$ |  |  |  |  |
| Insulation Resistance: | $>10^{3} \mathrm{M} \Omega$. |  |  |  | $>10^{3} \mathrm{M} \Omega$. |  |  |  |  |
| Dielectric Strength: | Contact to panel $>2.0 \mathrm{kV}$ Contact to contact 1500 V |  |  |  | Contact to panel $>2.0 \mathrm{kV}$ |  |  |  |  |
|  |  |  |  |  | Contact to | contact 1500 |  |  |  |
| Operating Temp. Range: | $-30^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ |  |  |  | $-30^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ |  |  |  |  |
| Sealing (Front \& rear of panel): | Protection classification: IP66, EN60529 1992 |  |  |  | Protection classification: IP66, EN60529 1992 |  |  |  |  |
| Operations Mechanical: Electrical: | $\begin{aligned} & 750,000(\mathrm{~min}) \\ & 35,000(\mathrm{~min}) \end{aligned}$ |  |  |  | 750,000 (min) |  |  |  |  |
| Operating Pressure: | 12 N |  |  |  | 12 N |  |  |  |  |
| Rear Nut Fixing Torque: | 0.57 Nm |  |  |  | 0.57 Nm |  |  |  |  |
| Materials |  |  |  |  |  |  |  |  |  |
| Switch assembly: | UL94V-0 rated Polyamide (Nylon) |  |  |  | UL94V-0 rated Polyamide (Nylon) |  |  |  |  |
| Tags: | Copper Alloy |  |  |  | Copper Alloy |  |  |  |  |
| Leads: | Tinned, stranded copper conductors |  |  |  | Tinned, stranded copper conductors |  |  |  |  |
| Switch Body \& Button: | Stainless Steel |  |  |  | Stainless SteelPolycarbonate |  |  |  |  |
| Lens and Lens Body: | PolycarbonateNitrile |  |  |  |  |  |  |  |  |
| O ring: |  |  |  |  | Nitrile |  |  |  |  |
| Internal seal: | Silicone |  |  |  | Silicone Gold Plated |  |  |  |  |
| Contact Plate: | Gold Plated |  |  |  |  |  |  |  |  |
| Thread size: | $18.97 \mathrm{~mm} \times 26 \mathrm{TPI}$ |  |  |  | $18.97 \mathrm{~mm} \times 26 \mathrm{TPI}$ |  |  |  |  |
| A | ESD Handling precautions must be takenCompliant |  |  |  | ESD Handling precautions must be taken |  |  |  |  |
| RohS |  |  |  |  | Compliant |  |  |  |  |

Low Profile Brass Chrome Plated Vandal Resistant


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

- Front Panel Sealed to IP66
- 21 mm diameter
- S.P.C.O. Microswitch
- $5 \mathrm{~A}, 250 \mathrm{Vac}$


| Specification |
| :--- |
| Terminations: |
| Switching: |
| Max. Rating: |
| Contact Resistance: |
| Insulation Resistance: |
| Dielectric Strength: |
| Operating Temp. Range: |
| Sealing (Front of panel only): |


$|$| Solder Tags |
| :--- |
| S.P.C. O. Momentary Action |
| (Microswitch) |
| $5 \mathrm{~A}, 250 \mathrm{Vac}$. |
| $2 \mathrm{~A}, 28 \mathrm{Vdc}$ |
| $<10 \mathrm{~m} \Omega$ |
| $>10^{3} \mathrm{M} \Omega$ |
| $>2.0 \mathrm{kVac}$ |
| $-20^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ |
| Protection Classification: IP66 EN60529 |

Solder Tags
S.P.C.O. Momentary Action
(Microswitch)
5A, 250Vac
2A, 28Vdc
$<10 \mathrm{~m} \Omega$
$>10^{3} \mathrm{M} \Omega$
$>2.0 \mathrm{kVac}$
$-20^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$
Protection Classification: IP66 EN60529
1992 (Micro switch not sealed)

1,000,000 (min)
35,000 (min)
4.7 N (typ)
0.57 Nm

Glass Filled Nylon
Brass, Tin Plated
Brass, Chrome Plated
Fine Silver
$0.747^{\prime \prime} \times 26 \mathrm{TPI}$
Compliant

MPB037
Screw Terminals
S.P. Push to make

Momentary action
$1 \mathrm{~A}, 50 \mathrm{Vac} / \mathrm{dc}$
$<10 \mathrm{~m} \Omega$
$>10^{5} \mathrm{M} \Omega$
$>1.0 \mathrm{kVac}$
$-20^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$
Protection Classification: IP68 EN60529
1992 (Terminals not sealed)

1,000,000 (min)
30,000 (min)
7.5 N (typ)
0.57 Nm

Glass Filled Nylon
Brass, Silver Plated
Brass, Chrome Plated
Brass, Silver Plated, Silver
0.747" x 26TPI

Compliant

Stainless Steel Large Diameter Vandal Resistant - Momentary

| FRONT PANEL MOUNTING - LOW PROFILE |  |
| :---: | :---: |
|  |  |
|  |  |
|  | - Front Panel Sealed to IP68 <br> - Flush button <br> - 32.0 mm diameter <br> - S.P.C.O. switching <br> - Momentary action <br> - $5 \mathrm{~A}, 250 \mathrm{Vac}$ |


FRONT PANEL MOUNTING - PROTRUDING PROFILE


- Front Panel Sealed to IP68
- Protruding button
- 32.0 mm diameter
- S.P.C.O. switching
- Momentary action
- $5 \mathrm{~A}, 250 \mathrm{Vac}$



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

- 22 mm diameter
- Domed Profile
- S.P.C.O. Microswitch
- $5 \mathrm{~A}, 250 \mathrm{Vac}$



Stainless Steel Domed Vandal Resistant


- Rear Panel Mounting
- 19mm diameter
- Domed Profile
- S.P.C.O. Microswitch
- $5 \mathrm{~A}, 250 \mathrm{Vac}$



Stainless Steel Prominent Button Vandal Resistant


- Front Panel Sealed to IP66
- 28mm diameter
- Prominent Button
- S.P.C.O. Microswitch
- $5 \mathrm{~A}, 250 \mathrm{Vac}$


| Specification |
| :--- |
| Terminations: |
| Switching: |
| Max. Rating: |
| Contact Resistance: |

Insulation Resistance:
Dielectric Strength:
Operating Temp. Range:
Sealing (Front of panel only):

Operations
Mechanical:
Electrical:
Operating Pressure:
Rear Nut Fixing Torque:
Materials
Mouldings:
Tags/Terminations:
Switch Body \& Button:
Contacts:
Thread size:
RoHS

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


MP0027/2

| Solder Tags | Solder Tags | Solder Tags |
| :---: | :---: | :---: |
| S.P.C.O. Momentary Action (Microswitch) | S.P.C.O. Momentary Action (Microswitch) | S.P.C.O. Momentary Action (Microswitch) |
| 5A, 250Vac | 5A, 250Vac | 5A, 250Vac |
| 2A, 28Vdc | $2 \mathrm{~A}, 28 \mathrm{Vdc}$ | 2A, 28Vdc |
| $<10 \mathrm{~m} \Omega$ | $<10 \mathrm{~m} \Omega$ | $<10 \mathrm{~m} \Omega$ |
| $>10^{3} \mathrm{M} \Omega$ | $>10^{3} \mathrm{M} \Omega$. | $>10^{3} \mathrm{M} \Omega$ |
| $>2.0 \mathrm{kVac}$ | $>2.0 \mathrm{kVac}$ | $>2.0 \mathrm{kVac}$ |
| $-20^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ | $-20^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ | $-20^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ |
| - | Protection Classification: IP66 EN60529 1992 (Micro switch not sealed) | - |
| $\begin{aligned} & \text { 1,000,000 (min) } \\ & 35,000(\mathrm{~min}) \end{aligned}$ | $\begin{aligned} & \text { 1,000,000 (min) } \\ & 35,000(\mathrm{~min}) \end{aligned}$ | $\begin{aligned} & 1,000,000(\mathrm{~min}) \\ & 35,000(\mathrm{~min}) \end{aligned}$ |
| 7.5 N (typ) | 12.5N (typ) | 6.1 N (typ) |
| 2.5 Nm | 1.13 Nm | - |
| Glass Filled Nylon Brass, Tin Plated Stainless Steel | Glass Filled Nylon Brass, Tin Plated Stainless Steel | Glass Filled Nylon Brass, Tin Plated Stainless Steel |
| Fine Silver | Fine Silver | Fine Silver |
| $1.0^{\prime \prime} \times 26 \mathrm{TPI}$ | $1.01 \times 26 \mathrm{TPI}$ | - |
| Compliant | Compliant | Compliant |

Stainless Steel Prominent Button Vandal Resistant



| Specification | 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 | 1A, 50Vac |
| Contact Resistance: | $<15 \mathrm{~m} \Omega$ | $<15 \mathrm{~m} \Omega$ |
| Insulation Resistance: | $>10^{4} \mathrm{M} \Omega$ | $>10^{4} \mathrm{M} \Omega$ |
| Dielectric Strength: | $>2.5 \mathrm{kVac}$ | $>2.5 \mathrm{kVac}$ |
| Operating Temp. Range: | $-20^{\circ} \mathrm{C}$ to $+85^{\circ} \mathrm{C}$ | $-20^{\circ} \mathrm{C}$ to $+85^{\circ} \mathrm{C}$ |
| 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: <br> Mouldings: Tags/Terminations: Switch Body \& Button: |  |  |
|  | Glass Filled Nylon | Glass Filled Nylon |
|  | Brass, Silver Plated | Brass, Silver Plated |
|  | Body: Brass, Chrome Plated Button: Stainless Steel | Body: Brass, Chrome Plated Button: Stainless Steel |
| Contacts: | Copper, Silver Plated | Copper, Silver Plated |
| RoHS | Compliant | Compliant |

Stainless Steel - Momentary





## Stainless Steel - Latching




Stainless Steel Illuminated Momentary


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


## FRONT PANEL MOUNTING



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



| Specification | 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. | $\begin{aligned} & \text { Red } \\ & \text { /RD } \end{aligned}$ | Green <br> /GN | Amber /AM | Blue /BL | $\begin{aligned} & \text { Red } \\ & \text { /RD } \end{aligned}$ | $\begin{aligned} & \text { Green } \\ & \text { /GN } \end{aligned}$ | Amber /AM | Blue /BL |
| Voltage Part No. | $\begin{array}{ll} 12 \mathrm{Vdc} & 220 \mathrm{Vdc} \\ / 012 & / 220 \end{array}$ |  |  |  | $\begin{array}{ll} 12 \mathrm{Vdc} & 220 \mathrm{Vdc} \\ / 012 & / 220 \end{array}$ |  |  |  |
| Contact Resistance: | $50 \mathrm{~m} \Omega$ max. @ 1A, 2Vdc |  |  |  | 50 m ¢ max. @ 1A, 2Vdc |  |  |  |
| Insulation Resistance: | $>10^{3} \mathrm{M} \Omega$ @ 500Vac |  |  |  | $>10^{3} \mathrm{M} \Omega$ @ 500Vac |  |  |  |
| Dielectric Strength: | $>2.0 \mathrm{kVac}$ |  |  |  | $>2.0 \mathrm{kVac}$ |  |  |  |
| Operating Temp. Range: | $-20^{\circ} \mathrm{C}$ to $+55^{\circ} \mathrm{C}$ |  |  |  | $-20^{\circ} \mathrm{C}$ to $+55^{\circ} \mathrm{C}$ |  |  |  |
| Operations Mechanical: Electrical: | $\begin{aligned} & 200,000(\mathrm{~min}) \\ & 30,000(\mathrm{~min}) \end{aligned}$ |  |  |  | $\begin{aligned} & 200,000(\mathrm{~min}) \\ & 30,000(\mathrm{~min}) \end{aligned}$ |  |  |  |
| Rear Nut Fixing Torque: | 12 Nm |  |  |  | 12 Nm |  |  |  |
| Materials Mouldings: Tags: Switch Body \& Button: | Nylon <br> Brass, Silver Plated Stainless Steel (Polished) |  |  |  | Nylon <br> Brass, Silver Plated Stainless Steel (Polished) |  |  |  |
| Variants | Prominent Button, details on request |  |  |  | Prominent Button, details on request |  |  |  |
| RoHS | Compliant |  |  |  | Complaint |  |  |  |

## Stainless Steel Illuminated Latching



| Specification | MP0045/1E1/Colour/Voltage |  |  |  | MP0045/1E2/Colour/Voltage |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Terminations: | Solder Tags |  |  |  | Solder Tags |  |  |  |  |
| Illumination: | Dot |  |  |  | Ring |  |  |  |  |
| Switching: | D.P.C.O. Latching Action |  |  |  | D.P.C.O. Latching Action |  |  |  |  |
| Max. Switch Rating: | $3 \mathrm{~A}, 250 \mathrm{Vac}$ |  |  |  | 3A, 250Vac |  |  |  |  |
| LEDs Colours Part No. | $\begin{aligned} & \text { Red } \\ & \text { /RD } \end{aligned}$ | Green /GN | Amber /AM | Blue /BL | $\begin{aligned} & \text { Red } \\ & \text { /RD } \end{aligned}$ | Green <br> /GN | Amber /AM | Blue /BL |  |
| Voltage Part No. | $\begin{array}{ll} 12 \mathrm{Vdc} & 220 \mathrm{Vdc} \\ / 012 & / 220 \end{array}$ |  |  |  | $\begin{array}{ll} 12 \mathrm{Vdc} & 220 \mathrm{Vdc} \\ / 012 & / 220 \end{array}$ |  |  |  |  |
| Contact Resistance: | $50 \mathrm{~m} \Omega$ max. @ 1A, 2Vdc |  |  |  | 50 m 血ax. @ 1A, 2Vdc |  |  |  |  |
| Insulation Resistance: | $>10^{3} \mathrm{M} \Omega$ @ 500Vac |  |  |  | $>10^{3} \mathrm{M} \Omega$ @ 500Vac |  |  |  |  |
| Dielectric Strength: | $>2.0 \mathrm{kVac}$ |  |  |  | $>2.0 \mathrm{kVac}$ |  |  |  |  |
| Operating Temp. Range: | $-20^{\circ} \mathrm{C}$ to $+55^{\circ} \mathrm{C}$ |  |  |  | $-20^{\circ} \mathrm{C}$ to $+55^{\circ} \mathrm{C}$ |  |  |  |  |
| Operations Mechanical: Electrical: | $\begin{aligned} & 200,000(\mathrm{~min}) \\ & 30,000(\mathrm{~min}) \end{aligned}$ |  |  |  | $\begin{aligned} & 200,000(\mathrm{~min}) \\ & 30,000(\mathrm{~min}) \end{aligned}$ |  |  |  |  |
| Rear Nut Fixing Torque: | 12 Nm |  |  |  | 12 Nm |  |  |  |  |
| Materials <br> Mouldings: <br> Tags: <br> Switch Body \& Button: | Nylon <br> Brass, Silver Plated <br> Stainless Steel (Polished) |  |  |  | Nylon <br> Brass, Silver Plated <br> Stainless Steel (Polished) |  |  |  |  |
| Variants | Prominent Button, details on request |  |  |  | Prominent Button, details on request |  |  |  |  |
| RoHS | Compliant |  |  |  | Complaint |  |  |  |  |



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

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

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


| Specification | MP0012/Colour | MP0012/1/Colour | MP0016/Colour |
| :---: | :---: | :---: | :---: |
| Terminations: | Screw Terminals | Screw Terminals | Solder Tags |
| Switching: | S.P. Push to Make | S.P. Push to Make | S.P. Push to Make |
|  | Slow Momentary Action | Slow Momentary Action | Slow Momentary Action |
| Max. Rating: | $0.25 \mathrm{~A} .250 \mathrm{Vac}, 1 \mathrm{~A} .110 \mathrm{Vac}$, 2A. $12 \mathrm{Vac} / \mathrm{dc}$ | $0.25 \mathrm{~A} .250 \mathrm{Vac}, 1 \mathrm{~A} .110 \mathrm{Vac}$, 2 A . $12 \mathrm{Vac} / \mathrm{dc}$ | 1A 28Vac/dc (non-inductive) |
| Contact Resistance: | $<15 \mathrm{~m} \Omega$ | $<15 \mathrm{~m} \Omega$ | $<15 \mathrm{~m} \Omega$ |
| Insulation Resistance: | $>10^{4} \mathrm{M} \Omega$ | $>10^{4} \mathrm{M} \Omega$. | $>10^{4} \mathrm{M} \Omega$ |
| Dielectric Strength: | $>2.5 \mathrm{kVac}$ | $>2.5 \mathrm{kVac}$ | $>2.0 \mathrm{kVac}$ |
| Operating Temp. Range: | $-20^{\circ} \mathrm{C}$ to $+85^{\circ} \mathrm{C}$ | $-20^{\circ} \mathrm{C}$ to $+85^{\circ} \mathrm{C}$ | $-20^{\circ} \mathrm{C}$ to $+85^{\circ} \mathrm{C}$ |
| Operatiing Pressure (typ): | 936 gms (33ozs) | 936 gms (33ozs) | 634gms (22ozs) |
| Materials: |  |  |  |
| Moulding: | Glass Filled Nylon | Glass Filled Nylon | Glass Filled Nylon |
| Body: | Brass, Chrome Plated | Brass, Chrome Plated | Brass, Chrome Plated |
| Contacts/Terms: | Brass, Silver Plated | Brass, Silver Plated | Brass, Silver Plated |
| Variants: | Button Colour: Standard - Black, /RD (Red) | Button Colour: Standard - Black, /RD (Red) | Button Colour: Standard - Black, /RD (Red) |
| RoHS | Compliant | Compliant | Compliant |

Push Button

## FRONT PANEL MOUNTING



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



## SWITCH CONTACT OPERATION


D.P.C.O.

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

| Specification | MP0022/Colour |  |
| :---: | :---: | :---: |
| Terminations: | Solder Tags |  |
| Switching: | S.P. Push to Make Slow Momentary Action |  |
| Max. Rating: | 0.25A. 250Vac, 0.5A. 110 Vac, 1 A .0 .1 to $28 \mathrm{Vac} / \mathrm{dc}$ |  |
| Contact Resistance: | $<15 \mathrm{~m} \Omega$ |  |
| Insulation Resistance: | $>10^{4} \mathrm{M} \Omega$ |  |
| Dielectric Strength: | $>2.5 \mathrm{kVac}$ |  |
| Operating Temp. Range: | $-20^{\circ} \mathrm{C}$ to $+70^{\circ} \mathrm{C}$ |  |
| Sealing: |  |  |
| Materials: Moulding: Tags: Body: | Nylon <br> Brass, Silver Plated Nylon |  |
| Contacts/Terms: | Brass, Silver Plated |  |
| Variants: | Button Colours: Standard - Black, /WH (White) and /RD (Red). /TERM - (Screw terminals) |  |
| RoHS | Compliant |  |

Voltage Selectors

－ 2.8 series tabs／solder tags
－Square Front Bezel
－6．3A
－CSA \＆VDE approvals

－ 2.8 series tabs／Solder tags
－Round Front Bezel
－6．3A
－CSA \＆VDE approvals

｜VS0002

| Specification | VS0001 | VS0002 |
| :---: | :---: | :---: |
| Max．Rating： | 6．3A，120／240V | 6．3A，120／240V |
| Insulation Resistance： | $>10^{6} \mathrm{M} \Omega$ | $>10^{6} \mathrm{M} \Omega$ ． |
| Termination： | 2.8 series tabs／solder tags | 2.8 series tabs／solder tags |
| Temperature Range： | $-20^{\circ} \mathrm{C}$ to $+85^{\circ} \mathrm{C}$ | $-20^{\circ} \mathrm{C}$ to $+85^{\circ} \mathrm{C}$ |
| Materials： Mouldings： Tags： | Glass Filled Nylon UL94V－1 Brass，Silver Plated | Glass Filled Nylon UL94V－1 <br> Brass，Silver Plated |
| Contacts： | Copper Silver Alloy | Copper Silver Alloy |
| Approvals： | 雨 會 | 阬 蓈 |
| Variants： | Other markings，details on request | Other markings，details on request |
| RoHS |  | Compliant |

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