

22mm Metal Push Buttons

Control and Signalling devices Ø 22.5mm

This range of Ø 22.5mm push buttons, selector switches, illuminated switches, illuminated selector switches and pilot lights have been designed to provide the following features:

- Economy of space
- Self-wiping contacts
- Safe operation
- Simple to mount (screw driver is all that is required)
- Fixing method unaffected by excessive vibration-unit does not loosen
- Protection against electric shock (unit grounded)
- Aesthetically pleasing
- Heavy-duty construction
- Shrouded terminals
- Flame resistant materials
- Use of LEDs for long life and minimum maintenance

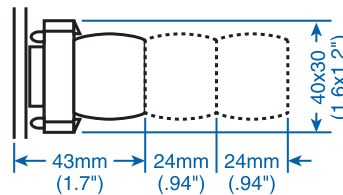
Actuators

The circular actuators have chrome plated metal bezels, and are interchangeable with different contact elements. Custom colors and finishes (black, silver satin, etc.) are available.

Contact Elements

The contact elements are double break and have self-wiping contacts. The elements are interchangeable and can be stacked without additional hardware. 1 to 6 elements (NO or NC) can be used with non-illuminated actuators, whereas, 1 to 4 elements (NO or NC) can be used for illuminated actuators. Gold plated NO and NC contact elements for low voltage, low current switching circuits < 25 mA, are available.

Multiple Switch Contact Assembly



LED Illuminated Actuators and Pilot Lights

LED illuminated actuators & pilot lights are supplied with LED in bayonet cap suitable for operating at various voltages. LED bulbs with bayonet cap are constructed in the standard BA9S design.

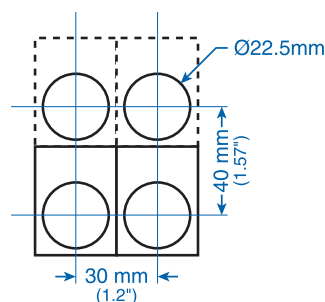
Terminals

Contact elements and pilot lights are designed to have shrouded terminals with combination flat/phillips screws.

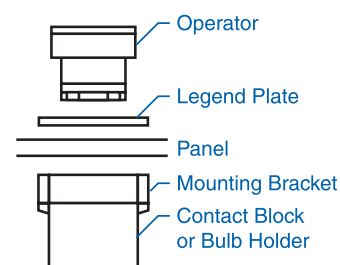
Mounting

These Ø 22.5 control devices can be mounted in any position in panels of 1 to 6 mm (.039 - .236 in.) thickness. We recommend minimum fixing centers of 30 x 40mm (1.2 x 1.57 inches). However, the dimensions and configuration should be decided on the basis of the application. The actuators and the lens assemblies lock on to the holding bracket using a bayonet type of fixing which enables a simple and fast assembly. The complete assembly is locked into position on the panel by two M4 pointed screws on the bracket, tightened equally from the rear. The screws should be tightened to such an extent as to pierce through the paint on the panel from inside. These screws also ensure the grounding of the unit.

Panel Cutout with minimum space requirements



Sample Push Button Assembly



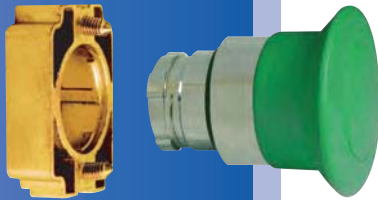
22mm Non-Illuminated Mushroom Metal Operators



Certified for
NEMA Type 4X
12 environment.

Mushroom

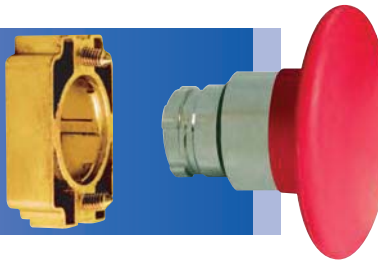
*Momentary
with mounting bracket*



| Color | Description | Cat No. |
|----------|-------------|---------|
| □ White | 40mm, Head | 2AM1 |
| ■ Black | 40mm, Head | 2AM2 |
| ■ Green | 40mm, Head | 2AM3 |
| ■ Red | 40mm, Head | 2AM4 |
| ■ Blue | 40mm, Head | 2AM6 |
| ■ Yellow | 40mm, Head | 2AM8 |

Mushroom

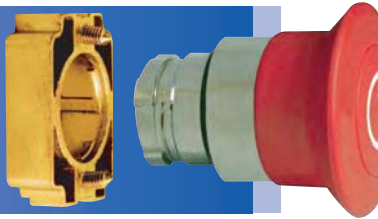
*Momentary Large
with mounting bracket*



| Color | Description | Cat No. |
|----------|-------------|---------|
| □ White | 60mm, Head | 2AMJ1 |
| ■ Black | 60mm, Head | 2AMJ2 |
| ■ Green | 60mm, Head | 2AMJ3 |
| ■ Red | 60mm, Head | 2AMJ4 |
| ■ Blue | 60mm, Head | 2AMJ6 |
| ■ Yellow | 60mm, Head | 2AMJ8 |

Mushroom

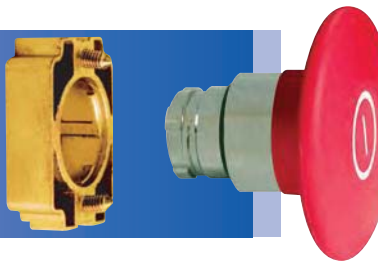
*Push-Pull
with mounting bracket*



| Color | Description | Cat No. |
|----------|-------------|---------|
| □ White | 40mm, Head | 2AMPP1 |
| ■ Black | 40mm, Head | 2AMPP2 |
| ■ Green | 40mm, Head | 2AMPP3 |
| ■ Red | 40mm, Head | 2AMPP4 |
| ■ Blue | 40mm, Head | 2AMPP6 |
| ■ Yellow | 40mm, Head | 2AMPP8 |

Mushroom

*Push-Pull Large
with mounting bracket*



| Color | Description | Cat No. |
|----------|-------------|---------|
| □ White | 60mm, Head | 2AMPPJ1 |
| ■ Black | 60mm, Head | 2AMPPJ2 |
| ■ Green | 60mm, Head | 2AMPPJ3 |
| ■ Red | 60mm, Head | 2AMPPJ4 |
| ■ Blue | 60mm, Head | 2AMPPJ6 |
| ■ Yellow | 60mm, Head | 2AMPPJ8 |

Markings on Request



Switch Contacts

(sold separately)



- Heavy-duty contact blocks with mounting screws. Blocks can be stacked 2 blocks across by 3 blocks deep for a total of 6 circuits.
- Contact blocks are available with silver contacts or gold plated contacts
- Self-wiping contacts

Panel Mount

| | |
|-----------------------------|-----------|
| Normally Open Silver | S1 |
| Normally Closed Silver | S2 |
| Normally Open Gold Plated | S3 |
| Normally Closed Gold Plated | S4 |

Base Mount*

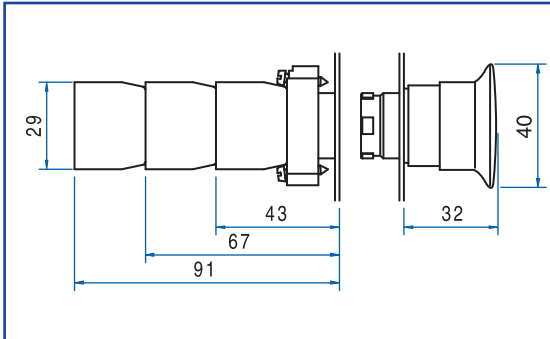
| | |
|-----------------------------|-----------|
| Normally Open Silver | S5 |
| Normally Closed Silver | S6 |
| Normally Open Gold Plated | S7 |
| Normally Closed Gold Plated | S8 |

* For use with non-illuminated operators in thermoplastic or aluminum enclosures listed on pages 30 and 36-37.

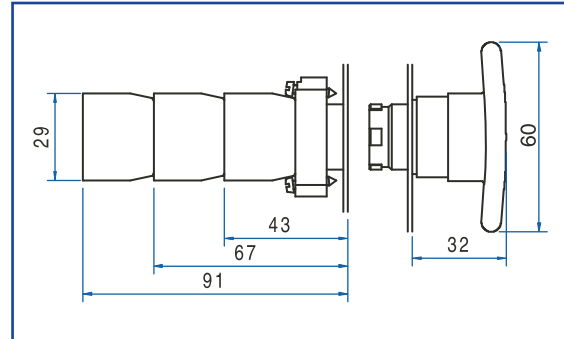
Dimensional Drawings

All dimensions shown in millimeters.
To convert to inches multiply by 0.03937

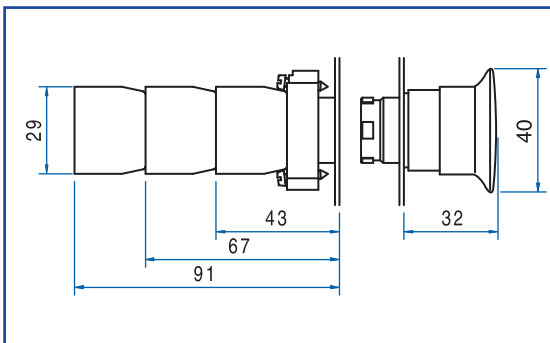
Mushroom Momentary



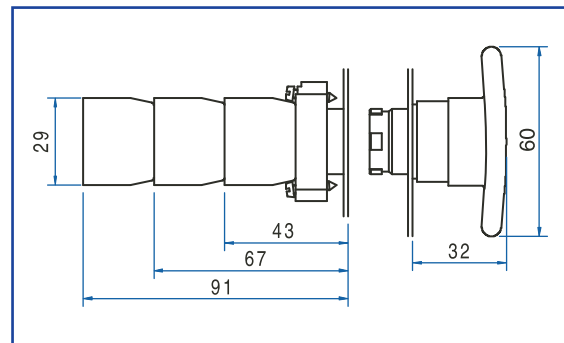
Mushroom Momentary Large



Mushroom Push-Pull

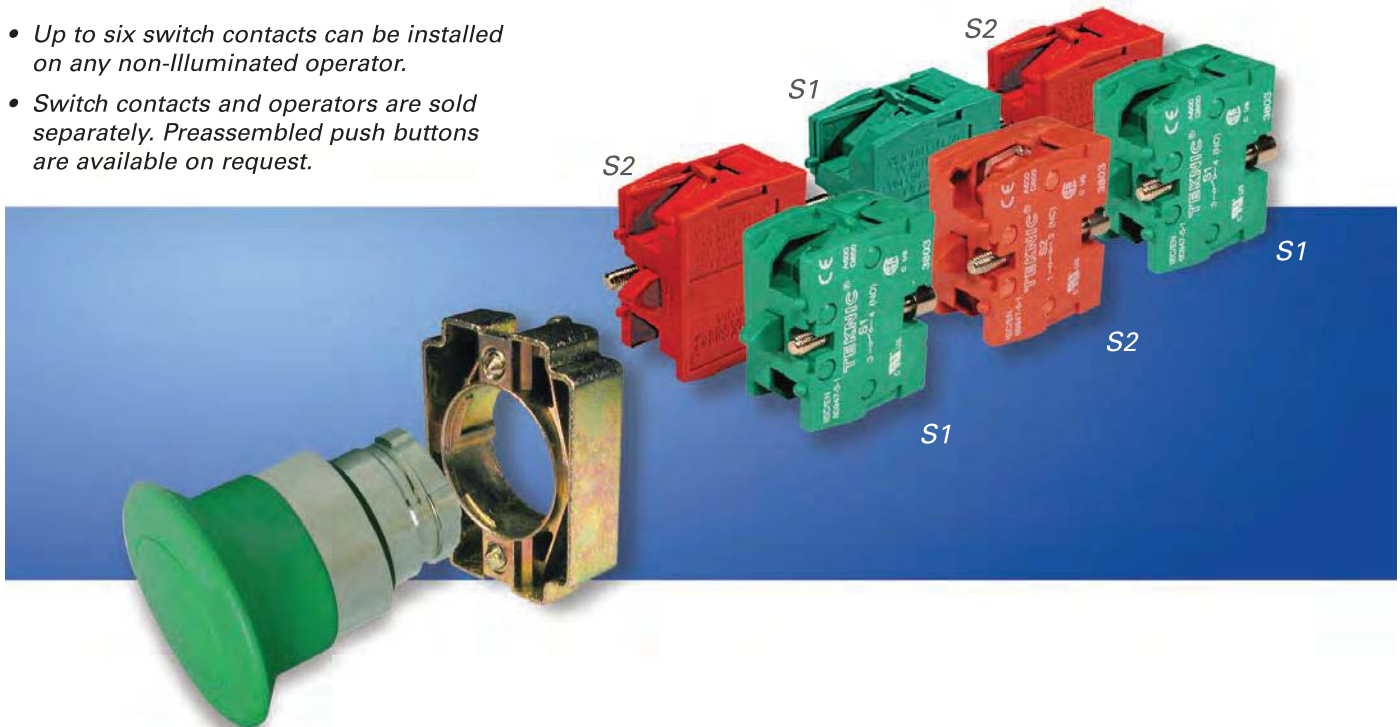


Mushroom Push-Pull Large



Exploded Assembly View

- Up to six switch contacts can be installed on any non-illuminated operator.
- Switch contacts and operators are sold separately. Preassembled push buttons are available on request.



22mm Specifications

Electrical and Mechanical Characteristics

| | |
|-----------------------|--|
| Standard conformity: | IEC 60947-5-1 |
| Approvals: | VDE0660 CSA - C22.2 No. 14-95 UL508 IEC 947 - 5 (1) 1990, IS 13947 ASTA UK certified as per IEC 947 - 5 - (1) 1990 |
| Degree of protection: | IP 65 as per IEC 529 NEMA Type 4X, 12 as per UL50 |
| Temperature Range: | - 25°C to + 70°C (-13°F to +158°F) |

Contact Block

| | |
|----------------------------|---|
| Rated voltage: | 600V AC /DC |
| Rated current: | 10A AC / 2.5A DC |
| Contact operation: | self-wiping, slow break NO or NC |
| UL508 rating (pilot duty): | |
| CSA - C22.2 No. 14-95: | A600: 10A; 600V AC Q600: 2.5A; 600V DC |
| Make and break capacity | |
| IEC 947 - 5 - (1) 1990: | AC 15 4A, 415V AC DC 13 0.5A, 110V DC |
| Terminal capacity: | minimum 20 AWG (0.5 mm ²) maximum 2x16 AWG (2 x 1.5 mm ²) or 14 AWG (2.5 mm ²) |
| Terminal marking: | 1-2 for NC, 3-4 for NO |
| Short circuit protection: | 10A cartridge fuse HRC type, rated for resistive loads |
| Mechanical life: | 1 million operations |

Modules for Pilot Lights & Illuminated Switches with LED Bulbs

| | |
|---|---|
| Current consumption (applicable to all colors) | |
| 24 VAC/DC, 100 VAC & 240 VAC: | max. 20 mA |
| 110 VDC: | max. 15 mA |
| 220 VDC: | max. 10 mA |
| Service life (at nominal voltage and at ambient temperature of 25°C): | 100,000 hours |
| Voltage limits (nominal voltage): | <20% of rated voltage> |
| Short circuit protection: | on specific request |
| Terminal capacity: | min. 1 x 0.5 mm ² (20 AWG), max. 2 x 1.5 mm ² (2x16 AWG) or 1 x 2.5 mm ² (1x14 AWG) |

Torque Specifications

| | |
|---------------------------------|------------------------|
| Mounting bracket screws | 1.2 Nm (10.8 lbs. in.) |
| Contact block to bracket screws | 0.5 Nm (4.5 lbs. in.) |
| Terminal screws (wiring) | 0.8 Nm (7.2 lbs. in.) |