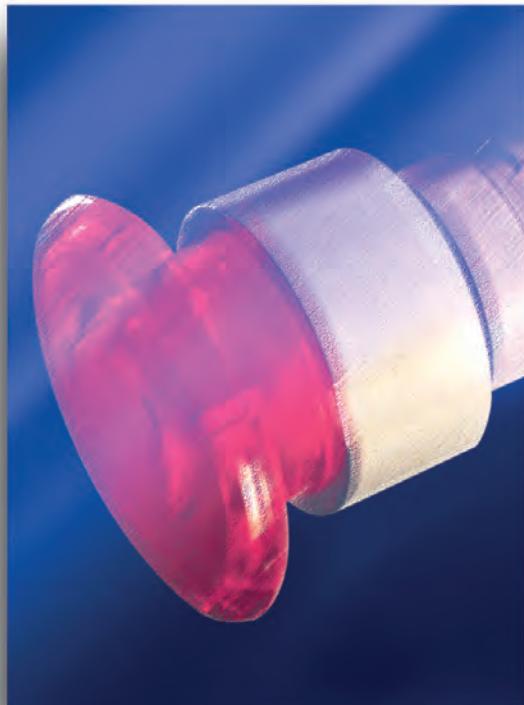


# Altech Corporation



Since 1984, Altech Corporation has grown to become a leading supplier of automation and industrial control components. Headquartered in Flemington, NJ, Altech has an experienced staff of engineering, manufacturing and sales personnel to provide the highest quality products with superior service. This is the Altech Commitment!

Altech 22 and 30mm Push Buttons offer ideal cost-effective solutions for control circuits utilizing both direct and remote management applications. Ease of assembly has been engineered into the design; the only tool necessary for installation is a screwdriver.

- LED Indicating Devices
- Pilot Lights
- Push Button Stations
- Push Button Enclosures
- UL Recognized
- Custom Push Button Assemblies
- All Very Competitively Priced

Our well trained technical experts welcome the opportunity to answer your technical questions and provide solutions to your automation and control needs. Give us a call or visit [www.altechcorp.com](http://www.altechcorp.com).



## Quality Commitment

Altech's control components meet diverse national and international standards such as UL, NEC, CSA, IEC, VDE and more. Altech provides superior customer service and delivery through Total Quality Management and Continuous Process Improvement.

Altech is ISO 9001 approved. We perform these services with honesty and integrity and are committed to achieve these goals.

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## 22 and 30 mm Altech Metal Push Buttons



Part No. PBD

**Quality at a Competitive Price!**

# 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

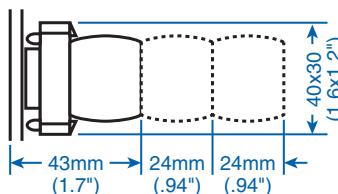
## Actuators

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.

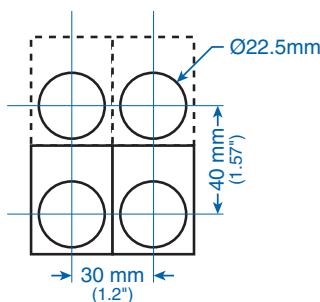
## Terminals

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

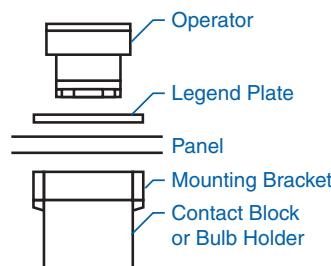
## Mounting

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 Metal Operators



Certified for  
**NEMA Type 4X**  
12 environment.  
E225660

**Flush**  
*Momentary*  
with mounting bracket



**Color** **Cat No.**

<input type="checkbox"/>	White	2AF1
<input checked="" type="checkbox"/>	Black	2AF2
<input type="checkbox"/>	Green	2AF3
<input type="checkbox"/>	Red	2AF4
<input type="checkbox"/>	Blue	2AF6
<input type="checkbox"/>	Yellow	2AF8

**Booted**  
*Momentary*  
with mounting bracket



**Color** **Cat No.**

<input type="checkbox"/>	White	2AB1
<input checked="" type="checkbox"/>	Black	2AB2
<input type="checkbox"/>	Green	2AB3
<input type="checkbox"/>	Red	2AB4
<input type="checkbox"/>	Blue	2AB6
<input type="checkbox"/>	Yellow	2AB8

**Projecting**  
*Momentary*  
with mounting bracket



**Color** **Cat No.**

<input type="checkbox"/>	White	2AP1
<input checked="" type="checkbox"/>	Black	2AP2
<input type="checkbox"/>	Green	2AP3
<input type="checkbox"/>	Red	2AP4
<input type="checkbox"/>	Blue	2AP6
<input type="checkbox"/>	Yellow	2AP8

**Recessed**  
*Momentary*  
with mounting bracket



**Color** **Cat No.**

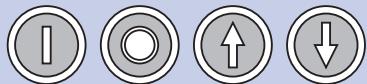
<input type="checkbox"/>	White	2AF1RH
<input checked="" type="checkbox"/>	Black	2AF2RH
<input type="checkbox"/>	Green	2AF3RH
<input type="checkbox"/>	Red	2AF4RH
<input type="checkbox"/>	Blue	2AF6RH
<input type="checkbox"/>	Yellow	2AF8RH



All above operators available with remote attachment.  
Standard length is 50mm (2 in.), other lengths available  
upon request. Contact Altech for Part Number.



## Markings on Request



Altech Push Buttons are available in a variety of markings, including molded arrows. Please contact Altech for further information and part numbers.

## 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	<b>S1</b>
Normally Closed Silver	<b>S2</b>
Normally Open Gold Plated	<b>S3</b>
Normally Closed Gold Plated	<b>S4</b>

### Base Mount\*

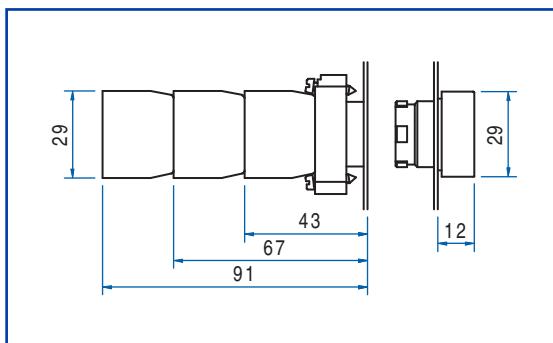
Normally Open Silver	<b>S5</b>
Normally Closed Silver	<b>S6</b>
Normally Open Gold Plated	<b>S7</b>
Normally Closed Gold Plated	<b>S8</b>

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

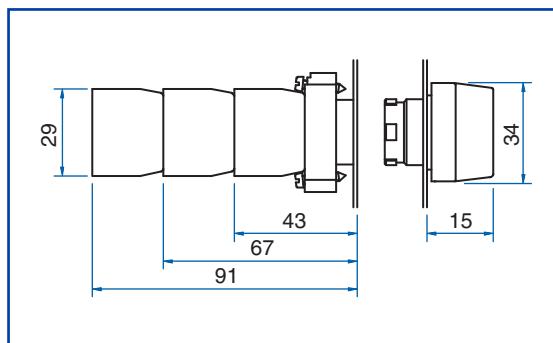
## Dimensional Drawings

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

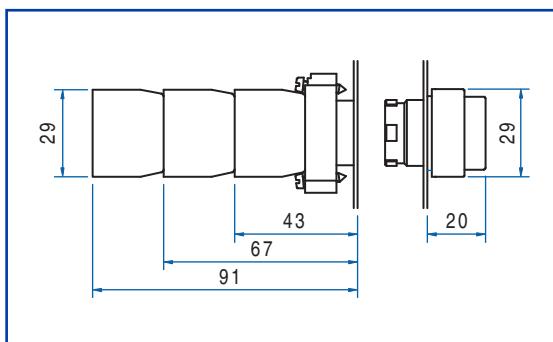
Non-Illuminated Flush



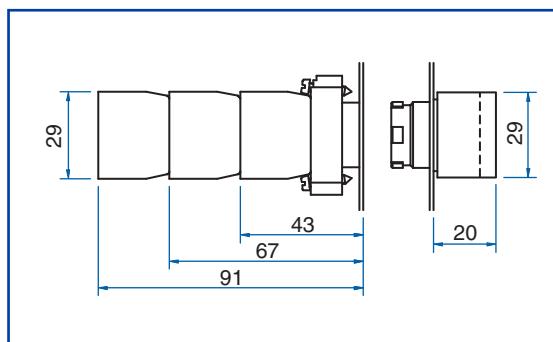
Non-Illuminated Booted



Non-Illuminated Projecting

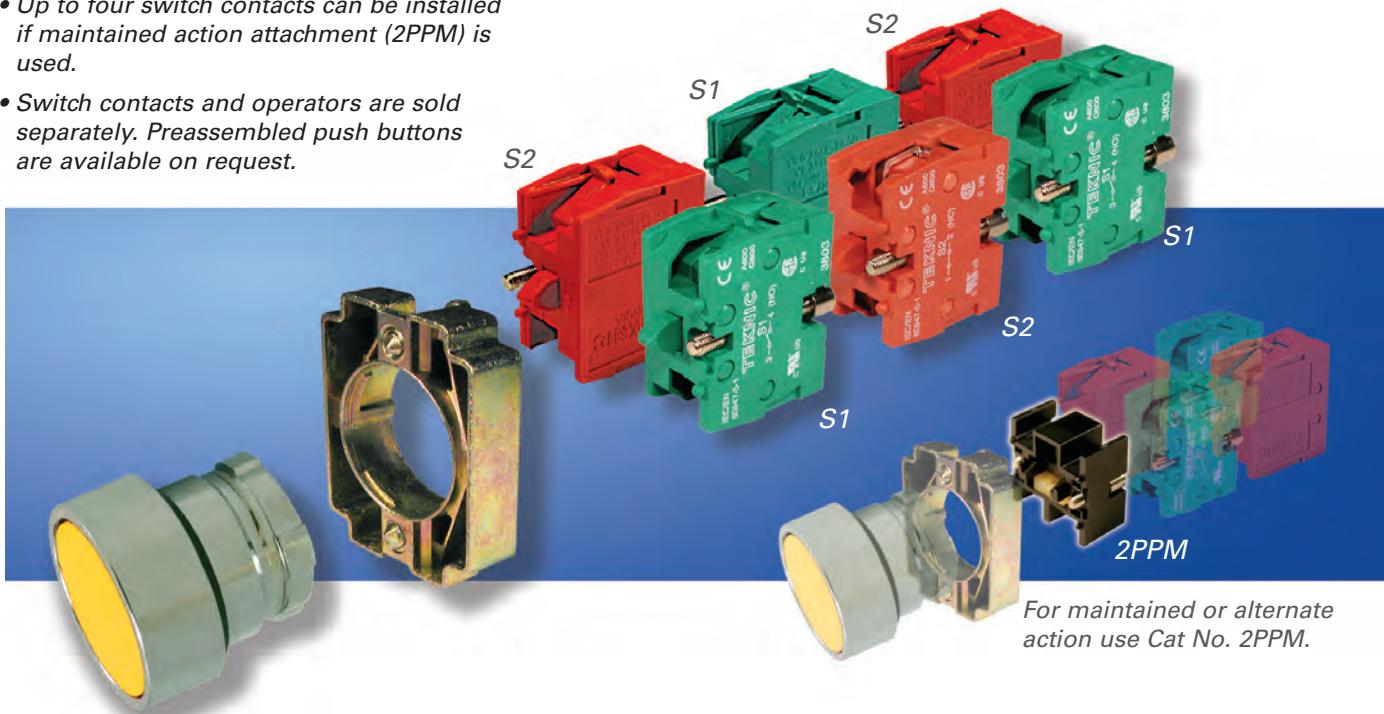


Non-Illuminated Recessed



## Exploded Assembly View

- Up to six switch contacts can be installed on any non-illuminated operator.
- Up to four switch contacts can be installed if maintained action attachment (2PPM) is used.
- Switch contacts and operators are sold separately. Preassembled push buttons are available on request.



For maintained or alternate action use Cat No. 2PPM.

# 22mm Non-Illuminated Mushroom Metal Operators



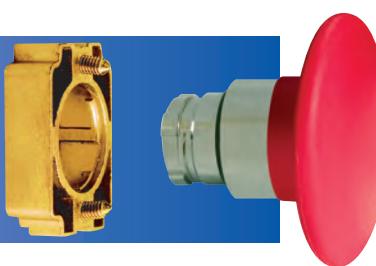
Certified for  
**NEMA Type 4X**  
12 environment.

**Mushroom**  
*Momentary*  
with mounting bracket



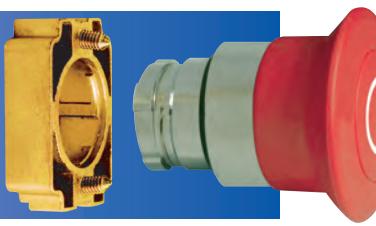
Color	Description	Cat No.
<input type="checkbox"/> White	40mm, Head	2AM1
<input type="checkbox"/> Black	40mm, Head	2AM2
<input type="checkbox"/> Green	40mm, Head	2AM3
<input type="checkbox"/> Red	40mm, Head	2AM4
<input type="checkbox"/> Blue	40mm, Head	2AM6
<input type="checkbox"/> Yellow	40mm, Head	2AM8

**Mushroom**  
*Momentary Large*  
with mounting bracket



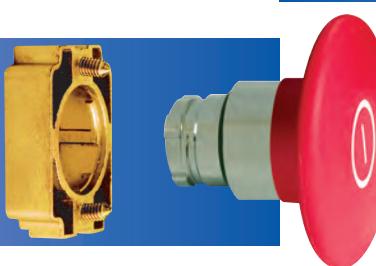
Color	Description	Cat No.
<input type="checkbox"/> White	60mm, Head	2AMJ1
<input type="checkbox"/> Black	60mm, Head	2AMJ2
<input type="checkbox"/> Green	60mm, Head	2AMJ3
<input type="checkbox"/> Red	60mm, Head	2AMJ4
<input type="checkbox"/> Blue	60mm, Head	2AMJ6
<input type="checkbox"/> Yellow	60mm, Head	2AMJ8

**Mushroom**  
*Push-Pull*  
with mounting bracket



Color	Description	Cat No.
<input type="checkbox"/> White	40mm, Head	2AMPP1
<input type="checkbox"/> Black	40mm, Head	2AMPP2
<input type="checkbox"/> Green	40mm, Head	2AMPP3
<input type="checkbox"/> Red	40mm, Head	2AMPP4
<input type="checkbox"/> Blue	40mm, Head	2AMPP6
<input type="checkbox"/> Yellow	40mm, Head	2AMPP8

**Mushroom**  
*Push-Pull Large*  
with mounting bracket



Color	Description	Cat No.
<input type="checkbox"/> White	60mm, Head	2AMPPJ1
<input type="checkbox"/> Black	60mm, Head	2AMPPJ2
<input type="checkbox"/> Green	60mm, Head	2AMPPJ3
<input type="checkbox"/> Red	60mm, Head	2AMPPJ4
<input type="checkbox"/> Blue	60mm, Head	2AMPPJ6
<input type="checkbox"/> Yellow	60mm, Head	2AMPPJ8

## Markings on Request



Altech Push Buttons are available in a variety of custom markings.

## 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	<b>S1</b>
Normally Closed Silver	<b>S2</b>
Normally Open Gold Plated	<b>S3</b>
Normally Closed Gold Plated	<b>S4</b>

### Base Mount\*

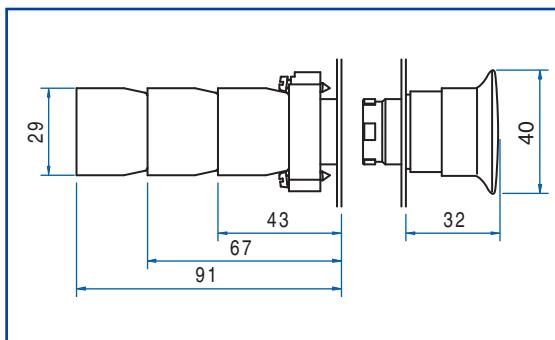
Normally Open Silver	<b>S5</b>
Normally Closed Silver	<b>S6</b>
Normally Open Gold Plated	<b>S7</b>
Normally Closed Gold Plated	<b>S8</b>

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

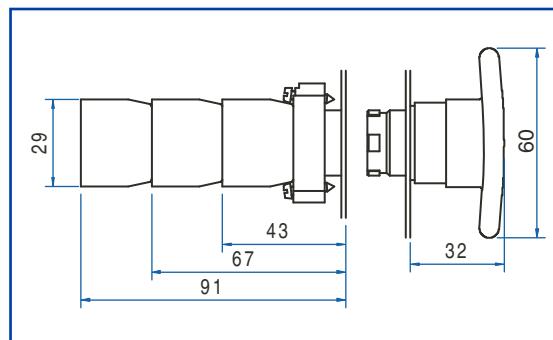
## Dimensional Drawings

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

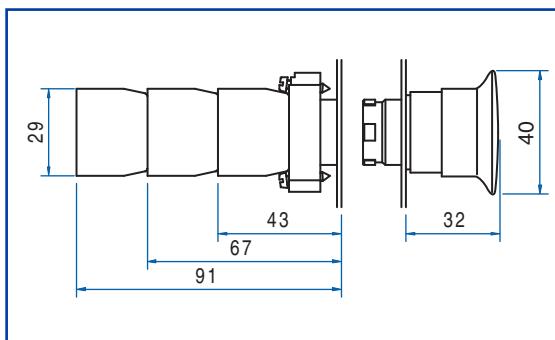
Mushroom Momentary



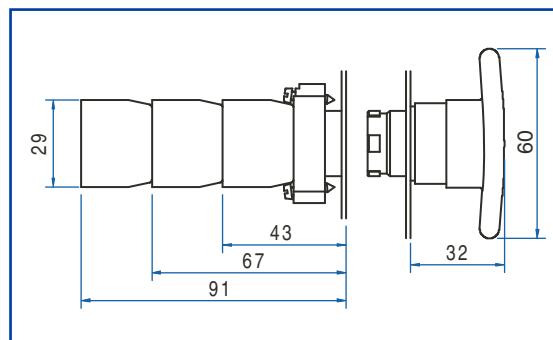
Mushroom Momentary Large



Mushroom Push-Pull

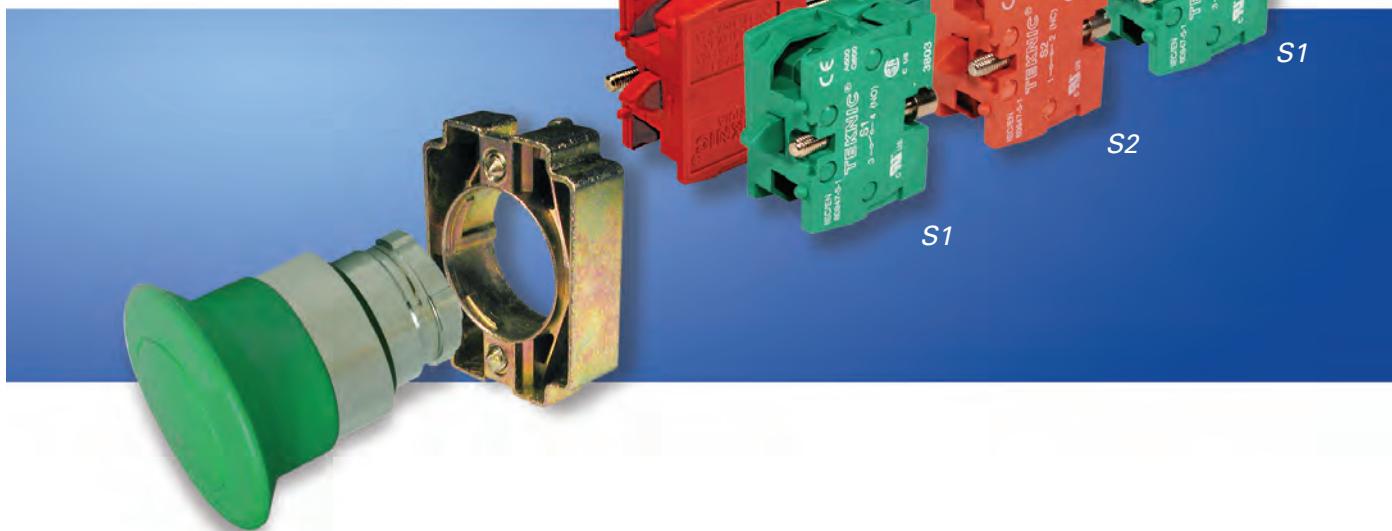
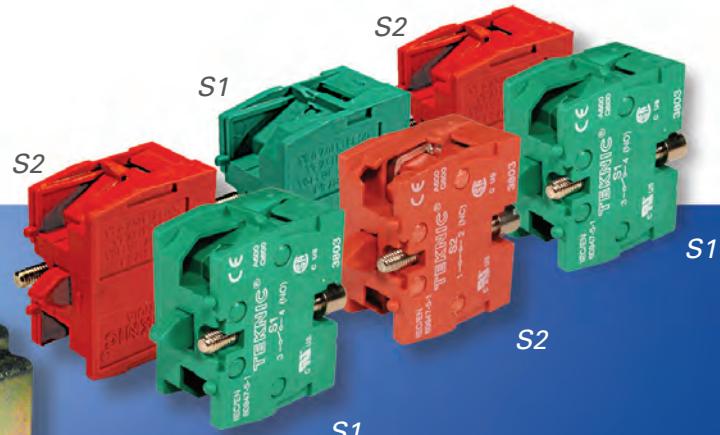


Mushroom Push-Pull Large



## 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 Non-Illuminated Mushroom Metal Operators



Certified for  
**NEMA Type 4X**  
12 environment.

## Mushroom Push-Turn Small with mounting bracket



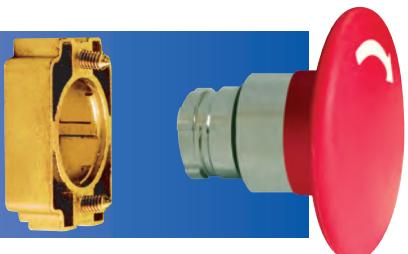
Color	Description	Cat No.
<input type="checkbox"/> White	30 mm, Head	2AMLS1
<input checked="" type="checkbox"/> Black	30 mm, Head	2AMLS2
<input type="checkbox"/> Green	30 mm, Head	2AMLS3
<input type="checkbox"/> Red	30 mm, Head	2AMLS4
<input type="checkbox"/> Blue	30 mm, Head	2AMLS6
<input type="checkbox"/> Yellow	30 mm, Head	2AMLS8

## Mushroom Push-Turn with mounting bracket



Color	Description	Cat No.
<input type="checkbox"/> White	40mm, Head	2AML1
<input checked="" type="checkbox"/> Black	40mm, Head	2AML2
<input type="checkbox"/> Green	40mm, Head	2AML3
<input type="checkbox"/> Red	40mm, Head	2AML4
<input type="checkbox"/> Blue	40mm, Head	2AML6
<input type="checkbox"/> Yellow	40mm, Head	2AML8

## Mushroom Push-Turn Large with mounting bracket



Color	Description	Cat No.
<input type="checkbox"/> White	60mm, Head	2AMLJ1
<input checked="" type="checkbox"/> Black	60mm, Head	2AMLJ2
<input type="checkbox"/> Green	60mm, Head	2AMLJ3
<input type="checkbox"/> Red	60mm, Head	2AMLJ4
<input type="checkbox"/> Blue	60mm, Head	2AMLJ6
<input type="checkbox"/> Yellow	60mm, Head	2AMLJ8

## Mushroom with Key Release with mounting bracket



Color	Description	Cat No.
<input type="checkbox"/> White	40mm, Head	2AMLKB1
<input checked="" type="checkbox"/> Black	40mm, Head	2AMLKB2
<input type="checkbox"/> Green	40mm, Head	2AMLKB3
<input type="checkbox"/> Red	40mm, Head	2AMLKB4
<input type="checkbox"/> Blue	40mm, Head	2AMLKB6
<input type="checkbox"/> Yellow	40mm, Head	2AMLKB8

All keys are "keyed alike". Different keys are available on request.



**Replacement Key**

**2KY455**

## Markings on Request



Altech Push Buttons are available in a variety of custom markings.

## 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	<b>S1</b>
Normally Closed Silver	<b>S2</b>
Normally Open Gold Plated	<b>S3</b>
Normally Closed Gold Plated	<b>S4</b>

## Base Mount\*

Normally Open Silver	<b>S5</b>
Normally Closed Silver	<b>S6</b>
Normally Open Gold Plated	<b>S7</b>
Normally Closed Gold Plated	<b>S8</b>

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

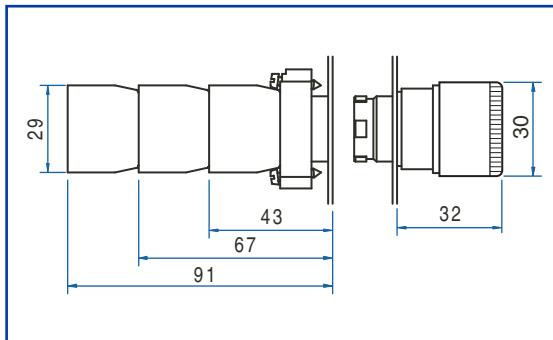
# 22mm Non-Illuminated Mushroom Metal Operators

**Altech**

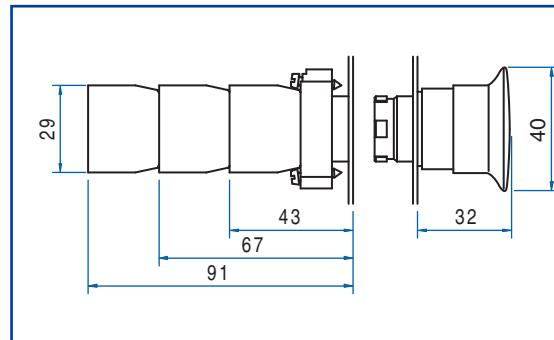
## Dimensional Drawings

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

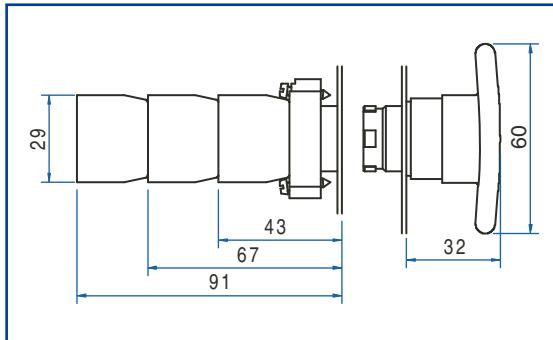
Mushroom Push-Turn Small



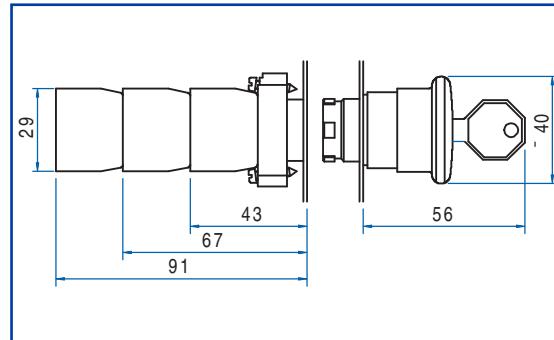
Mushroom Push-Turn



Mushroom Push-Turn Large

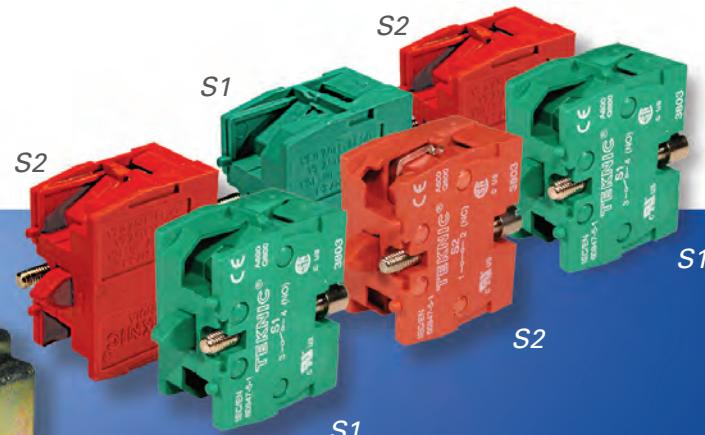


Mushroom with Key Release



## 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 LED Illuminated Mushroom Metal Operators



Certified for  
**NEMA Type 4X**  
12 environment.

## Mushroom Illuminated Momentary

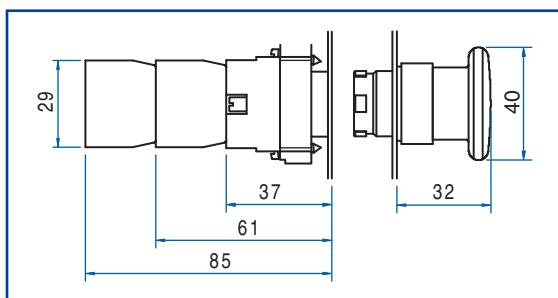


with LED bulb, bulb holder and mounting bracket

## Dimensional Drawings

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

Illuminated Mushroom Momentary



## 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	<b>S1</b>
Normally Closed Silver	<b>S2</b>
Normally Open Gold Plated	<b>S3</b>
Normally Closed Gold Plated	<b>S4</b>

### Base Mount\*

Normally Open Silver	<b>S5</b>
Normally Closed Silver	<b>S6</b>
Normally Open Gold Plated	<b>S7</b>
Normally Closed Gold Plated	<b>S8</b>

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

## Color      Description      Cat No.

### 12V AC/DC

<input type="checkbox"/> White	40mm Head, 12VAC/DC	<b>2ALM1LB-012</b>
<input checked="" type="checkbox"/> Green	40mm Head, 12VAC/DC	<b>2ALM3LB-012</b>
<input type="checkbox"/> Red	40mm Head, 12VAC/DC	<b>2ALM4LB-012</b>
<input type="checkbox"/> Amber	40mm Head, 12VAC/DC	<b>2ALM5LB-012</b>
<input type="checkbox"/> Blue	40mm Head, 12VAC/DC	<b>2ALM6LB-012</b>
<input type="checkbox"/> Clear	40mm Head, 12VAC/DC	<b>2ALM7LB-012</b>
<input type="checkbox"/> Yellow	40mm Head, 12VAC/DC	<b>2ALM8LB-012</b>

### 24V AC/DC

<input type="checkbox"/> White	40mm Head, 24VAC/DC	<b>2ALM1LB-024</b>
<input checked="" type="checkbox"/> Green	40mm Head, 24VAC/DC	<b>2ALM3LB-024</b>
<input type="checkbox"/> Red	40mm Head, 24VAC/DC	<b>2ALM4LB-024</b>
<input type="checkbox"/> Amber	40mm Head, 24VAC/DC	<b>2ALM5LB-024</b>
<input type="checkbox"/> Blue	40mm Head, 24VAC/DC	<b>2ALM6LB-024</b>
<input type="checkbox"/> Clear	40mm Head, 24VAC/DC	<b>2ALM7LB-024</b>
<input type="checkbox"/> Yellow	40mm Head, 24VAC/DC	<b>2ALM8LB-024</b>

### 48V AC/DC

<input type="checkbox"/> White	40mm Head, 48VAC/DC	<b>2ALM1LB-048</b>
<input checked="" type="checkbox"/> Green	40mm Head, 48VAC/DC	<b>2ALM3LB-048</b>
<input type="checkbox"/> Red	40mm Head, 48VAC/DC	<b>2ALM4LB-048</b>
<input type="checkbox"/> Amber	40mm Head, 48VAC/DC	<b>2ALM5LB-048</b>
<input type="checkbox"/> Blue	40mm Head, 48VAC/DC	<b>2ALM6LB-048</b>
<input type="checkbox"/> Clear	40mm Head, 48VAC/DC	<b>2ALM7LB-048</b>
<input type="checkbox"/> Yellow	40mm Head, 48VAC/DC	<b>2ALM8LB-048</b>

### 110V AC\*

<input type="checkbox"/> White	40mm Head, 110VAC*	<b>2ALM1LB-110</b>
<input checked="" type="checkbox"/> Green	40mm Head, 110VAC*	<b>2ALM3LB-110</b>
<input type="checkbox"/> Red	40mm Head, 110VAC*	<b>2ALM4LB-110</b>
<input type="checkbox"/> Amber	40mm Head, 110VAC*	<b>2ALM5LB-110</b>
<input type="checkbox"/> Blue	40mm Head, 110VAC*	<b>2ALM6LB-110</b>
<input type="checkbox"/> Clear	40mm Head, 110VAC*	<b>2ALM7LB-110</b>
<input type="checkbox"/> Yellow	40mm Head, 110VAC*	<b>2ALM8LB-110</b>

### 230V AC\*

<input type="checkbox"/> White	40mm Head, 230VAC*	<b>2ALM1LB-230</b>
<input checked="" type="checkbox"/> Green	40mm Head, 230VAC*	<b>2ALM3LB-230</b>
<input type="checkbox"/> Red	40mm Head, 230VAC*	<b>2ALM4LB-230</b>
<input type="checkbox"/> Amber	40mm Head, 230VAC*	<b>2ALM5LB-230</b>
<input type="checkbox"/> Blue	40mm Head, 230VAC*	<b>2ALM6LB-230</b>
<input type="checkbox"/> Clear	40mm Head, 230VAC*	<b>2ALM7LB-230</b>
<input type="checkbox"/> Yellow	40mm Head, 230VAC*	<b>2ALM8LB-230</b>

\*110V DC and 230V DC version is available on request.

## Exploded Assembly View

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



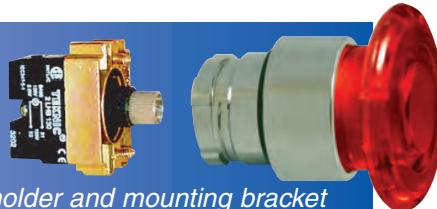
# 22mm LED Illuminated Mushroom Metal Operators



Certified for  
**NEMA Type 4X**  
12 environment.

## Mushroom Illuminated Push-Pull

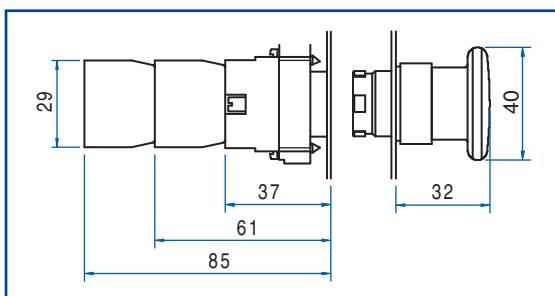
with LED bulb, bulb holder and mounting bracket



## Dimensional Drawings

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

Illuminated Mushroom Push-Pull



## 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	<b>S1</b>
Normally Closed Silver	<b>S2</b>
Normally Open Gold Plated	<b>S3</b>
Normally Closed Gold Plated	<b>S4</b>

### Base Mount\*

Normally Open Silver	<b>S5</b>
Normally Closed Silver	<b>S6</b>
Normally Open Gold Plated	<b>S7</b>
Normally Closed Gold Plated	<b>S8</b>

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

## Color      Description      Cat No.

### 12V AC/DC

<input type="checkbox"/> White	40mm Head, 12VAC/DC	<b>2ALMPP1LB-012</b>
<input type="checkbox"/> Green	40mm Head, 12VAC/DC	<b>2ALMPP3LB-012</b>
<input type="checkbox"/> Red	40mm Head, 12VAC/DC	<b>2ALMPP4LB-012</b>
<input type="checkbox"/> Amber	40mm Head, 12VAC/DC	<b>2ALMPP5LB-012</b>
<input type="checkbox"/> Blue	40mm Head, 12VAC/DC	<b>2ALMPP6LB-012</b>
<input type="checkbox"/> Clear	40mm Head, 12VAC/DC	<b>2ALMPP7LB-012</b>
<input type="checkbox"/> Yellow	40mm Head, 12VAC/DC	<b>2ALMPP8LB-012</b>

### 24V AC/DC

<input type="checkbox"/> White	40mm Head, 24VAC/DC	<b>2ALMPP1LB-024</b>
<input type="checkbox"/> Green	40mm Head, 24VAC/DC	<b>2ALMPP3LB-024</b>
<input type="checkbox"/> Red	40mm Head, 24VAC/DC	<b>2ALMPP4LB-024</b>
<input type="checkbox"/> Amber	40mm Head, 24VAC/DC	<b>2ALMPP5LB-024</b>
<input type="checkbox"/> Blue	40mm Head, 24VAC/DC	<b>2ALMPP6LB-024</b>
<input type="checkbox"/> Clear	40mm Head, 24VAC/DC	<b>2ALMPP7LB-024</b>
<input type="checkbox"/> Yellow	40mm Head, 24VAC/DC	<b>2ALMPP8LB-024</b>

### 48V AC/DC

<input type="checkbox"/> White	40mm Head, 48VAC/DC	<b>2ALMPP1LB-048</b>
<input type="checkbox"/> Green	40mm Head, 48VAC/DC	<b>2ALMPP3LB-048</b>
<input type="checkbox"/> Red	40mm Head, 48VAC/DC	<b>2ALMPP4LB-048</b>
<input type="checkbox"/> Amber	40mm Head, 48VAC/DC	<b>2ALMPP5LB-048</b>
<input type="checkbox"/> Blue	40mm Head, 48VAC/DC	<b>2ALMPP6LB-048</b>
<input type="checkbox"/> Clear	40mm Head, 48VAC/DC	<b>2ALMPP7LB-048</b>
<input type="checkbox"/> Yellow	40mm Head, 48VAC/DC	<b>2ALMPP8LB-048</b>

### 110V AC\*

<input type="checkbox"/> White	40mm Head, 110VAC*	<b>2ALMPP1LB-110</b>
<input type="checkbox"/> Green	40mm Head, 110VAC*	<b>2ALMPP3LB-110</b>
<input type="checkbox"/> Red	40mm Head, 110VAC*	<b>2ALMPP4LB-110</b>
<input type="checkbox"/> Amber	40mm Head, 110VAC*	<b>2ALMPP5LB-110</b>
<input type="checkbox"/> Blue	40mm Head, 110VAC*	<b>2ALMPP6LB-110</b>
<input type="checkbox"/> Clear	40mm Head, 110VAC*	<b>2ALMPP7LB-110</b>
<input type="checkbox"/> Yellow	40mm Head, 110VAC*	<b>2ALMPP8LB-110</b>

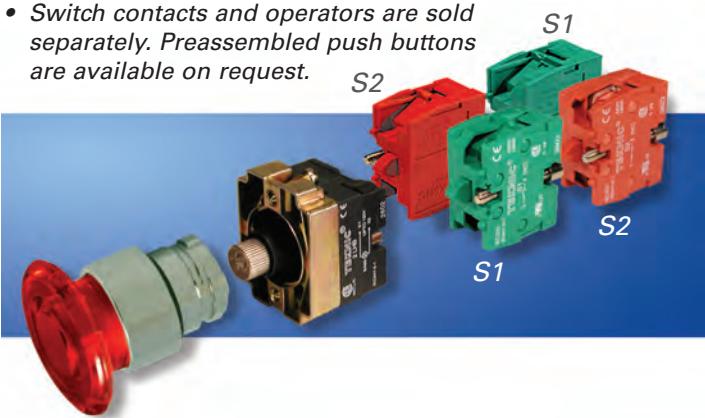
### 230V AC\*

<input type="checkbox"/> White	40mm Head, 230VAC*	<b>2ALMPP1LB-230</b>
<input type="checkbox"/> Green	40mm Head, 230VAC*	<b>2ALMPP3LB-230</b>
<input type="checkbox"/> Red	40mm Head, 230VAC*	<b>2ALMPP4LB-230</b>
<input type="checkbox"/> Amber	40mm Head, 230VAC*	<b>2ALMPP5LB-230</b>
<input type="checkbox"/> Blue	40mm Head, 230VAC*	<b>2ALMPP6LB-230</b>
<input type="checkbox"/> Clear	40mm Head, 230VAC*	<b>2ALMPP7LB-230</b>
<input type="checkbox"/> Yellow	40mm Head, 230VAC*	<b>2ALMPP8LB-230</b>

\*110V DC and 230V DC version is available on request.

## Exploded Assembly View

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

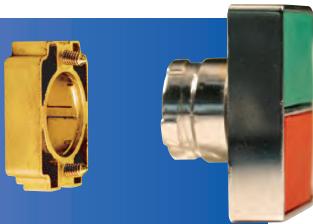


# 22mm Twin Touch Metal Non-Illuminated Operators



Certified for  
**NEMA Type 4X**  
12 environment.

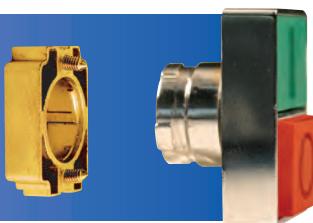
## Twin Touch/ Not Marked with mounting bracket



Color	Description	Cat No.
GREEN-RED	Flush	2ATF3-F4
YELLOW-BLACK	Flush	2ATF8-F2
BLACK-WHITE	Flush	2ATF2-F1
GREEN-RED	Green Flush, Red Projecting	2ATF3-P4
YELLOW-BLACK	Yellow Flush, Black Projecting	2ATF8-P2
WHITE-BLACK	White Flush, Black Projecting	2ATF1-P2

Arrows marking available upon request.

## Twin Touch I-O Marked with mounting bracket



Color	Description	Cat No.
GREEN-RED	Flush	2ATF3-F4-IO
YELLOW-BLACK	Flush	2ATF8-F2-IO
BLACK-WHITE*	Flush	2ATF2-F1-IO
GREEN-RED	Green Flush, Red Projecting	2ATF3-P4-IO
YELLOW-BLACK	Yellow Flush, Black Projecting	2ATF8-P2-IO
WHITE-BLACK*	White Flush, Black Projecting	2ATF1-P2-IO

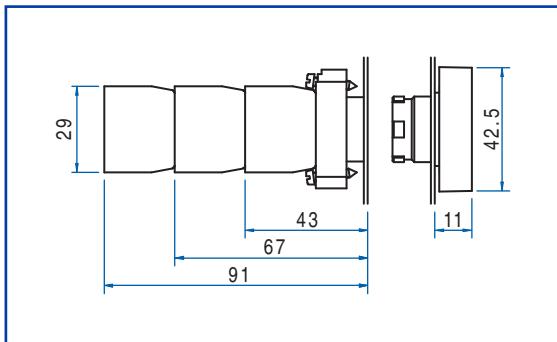
\*Comply with vision impaired requirements.

Arrows marking available upon request.

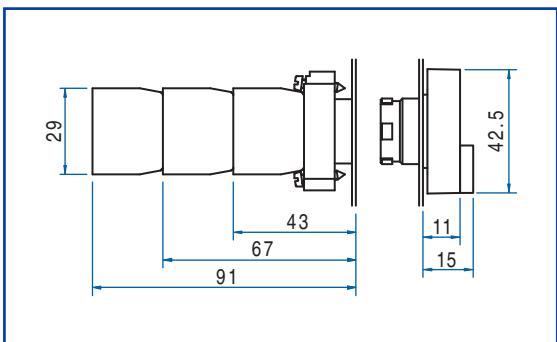
## Dimensional Drawings

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

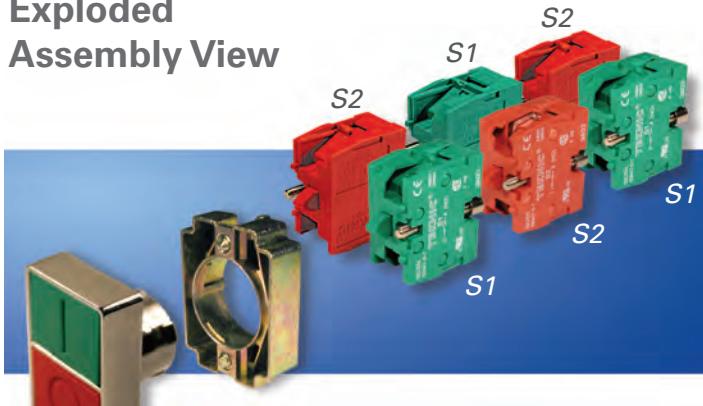
Twin Touch/ Flush



Twin Touch/ Flush/ Projecting



## Exploded Assembly View



- Up to four switch contacts can be installed with any illuminated operators.
- Switch contacts and operators are sold separately. Preassembled push buttons are available 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 Cat No.	Base Mount* Cat No.
Normally Open Silver	S1
Normally Closed Silver	S2
Normally Open Gold plated	S3
Normally Closed Gold plated	S4

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

# 22mm Twin Touch Metal LED Illuminated Operators

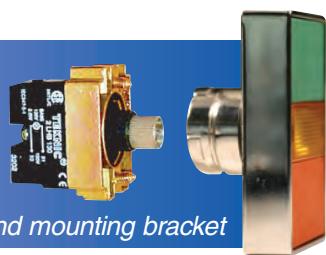
**Altech**



Certified for  
**NEMA Type 4X**  
12 environment.

## Illuminated Center Twin Touch/ Not Marked

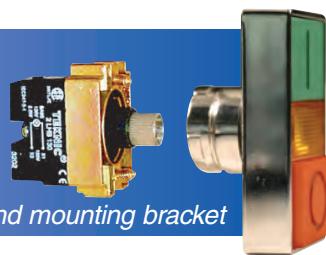
with LED bulb, bulb holder and mounting bracket



Arrows marking available upon request.  
Other lens colors available upon request.

## Illuminated Center Twin Touch/ I-O Marked

with LED bulb, bulb holder and mounting bracket

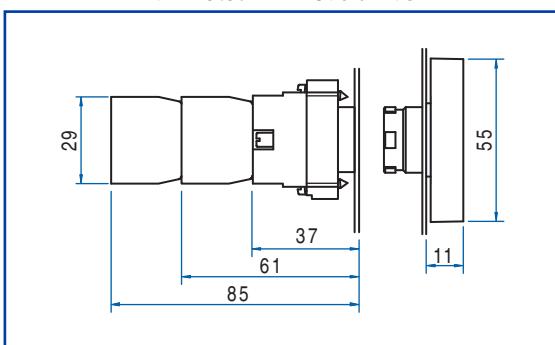


Arrows marking available upon request.  
Other lens colors available upon request.

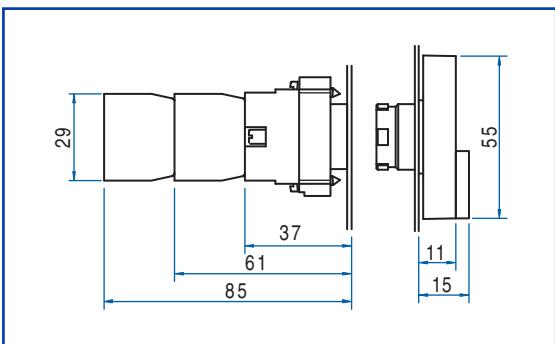
## Dimensional Drawings

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

Illuminated Twin Touch/ Flush



Illuminated Twin Touch/ Flush/ Projecting



## Color      Description      Cat No.

### GREEN-RED, Flush, Illuminated Center

Amber	12VAC/DC	2ATL5LB F3F4-012
Amber	24VAC/DC	2ATL5LB F3F4-024
Amber	48VAC/DC	2ATL5LB F3F4-048
Amber	110VAC**	2ATL5LB F3F4-110
Amber	230VAC**	2ATL5LB F3F4-230

### GREEN-RED, Green Flush/ Red Projecting, Illuminated center

Amber	12VAC/DC	2ATL5LB F3P4-012
Amber	24VAC/DC	2ATL5LB F3P4-024
Amber	48VAC/DC	2ATL5LB F3P4-048
Amber	110VAC**	2ATL5LB F3P4-110
Amber	230VAC**	2ATL5LB F3P4-230

## Color      Description      Cat No.

### GREEN-RED, Flush, Illuminated Center

Amber	12VAC/DC	2ATL5LB F3F4-IO-012
Amber	24VAC/DC	2ATL5LB F3F4-IO-024
Amber	48VAC/DC	2ATL5LB F3F4-IO-048
Amber	110VAC**	2ATL5LB F3F4-IO-110
Amber	230VAC**	2ATL5LB F3F4-IO-230

### GREEN-RED, Green Flush/ Red Projecting, Illuminated Center

Amber	12VAC/DC	2ATL5LB F3P4-IO-012
Amber	24VAC/DC	2ATL5LB F3P4-IO-024
Amber	48VAC/DC	2ATL5LB F3P4-IO-048
Amber	110VAC**	2ATL5LB F3P4-IO-110
Amber	230VAC**	2ATL5LB F3P4-IO-230

### WHITE-BLACK\*, Flush, Illuminated Center

Amber	12VAC/DC	2ATL5LB F2F1-IO-012
Amber	24VAC/DC	2ATL5LB F2F1-IO-024
Amber	48VAC/DC	2ATL5LB F2F1-IO-048
Amber	110VAC**	2ATL5LB F2F1-IO-110
Amber	230VAC**	2ATL5LB F2F1-IO-230

\* Comply with vision impaired requirements.

\*\* 110V DC and 230V DC version is available on request.

## Exploded Assembly View



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

## Switch Contacts (sold separately)



**Panel Mount      Base Mount\***  
Cat No.      Cat No.

Normally Open Silver	<b>S1</b>	<b>S5</b>
Normally Closed Silver	<b>S2</b>	<b>S6</b>
Normally Open Gold plated	<b>S3</b>	<b>S7</b>
Normally Closed Gold plated	<b>S4</b>	<b>S8</b>

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

# 22mm Non-Illuminated Metal Selector Switch Operators



Certified for  
**NEMA Type 4X**  
12 environment.

## Key Selector

with mounting bracket



Other key combinations and colors are available on request.  
All keys are "keyed alike". Different keys are available on request.

## Selector

with mounting bracket



Other colors are available on request.

## Extended Selector

with mounting bracket



Other colors are available on request.

### Color      Description      Key Removal      Cat No.

■ Black	○○ Maintained	Left/Right	2AK2-01
■ Black	○○ Maintained	Left	2AK2-02
■ Black	○○ Maintained	Right	2AK2-03
■ Black	○○ Spring Return	Left	2AK2-04
■ Black	○○ Maintained	Left/Right	2AK2-05
■ Black	○○ Maintained	All	2AK2-06
■ Black	○○ Maintained	Center	2AK2-07
■ Black	○○ Spring Return	Center	2AK2-08
■ Black	○○ Spring Return	Center	2AK2-09
■ Black	○○ Spring Return	Center	2AK2-10
■ Black	○○ Maintained	Left	2AK2-11



**2KY455**

### Color      Description      Cat No.

■ Black	○○ Maintained	2AS2-1
■ Black	○○ Spring Return	2AS2-2
■ Black	○○ Maintained	2AS2-3
■ Black	○○ Spring Return	2AS2-4
■ Black	○○ Spring Return	2AS2-5
■ Black	○○ Spring Return	2AS2-6

### Color      Description      Cat No.

■ Black	○○ Maintained	2AS2E-1
■ Black	○○ Spring Return	2AS2E-2
■ Black	○○ Maintained	2AS2E-3
■ Black	○○ Spring Return	2AS2E-4
■ Black	○○ Spring Return	2AS2E-5
■ Black	○○ Spring Return	2AS2E-6

## Markings on Request



Altech Push Buttons are available in a variety of markings, including molded arrows. Please contact Altech for further information and part numbers.

## 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	<b>S1</b>
Normally Closed Silver	<b>S2</b>
Normally Open Gold Plated	<b>S3</b>
Normally Closed Gold Plated	<b>S4</b>

### Base Mount\*

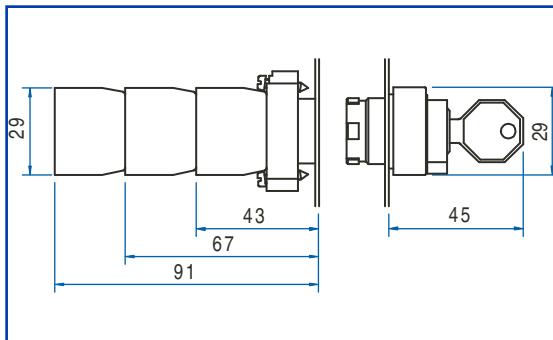
Normally Open Silver	<b>S5</b>
Normally Closed Silver	<b>S6</b>
Normally Open Gold Plated	<b>S7</b>
Normally Closed Gold Plated	<b>S8</b>

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

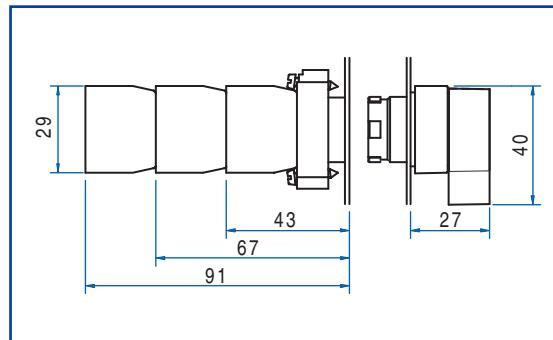
### Dimensional Drawings

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

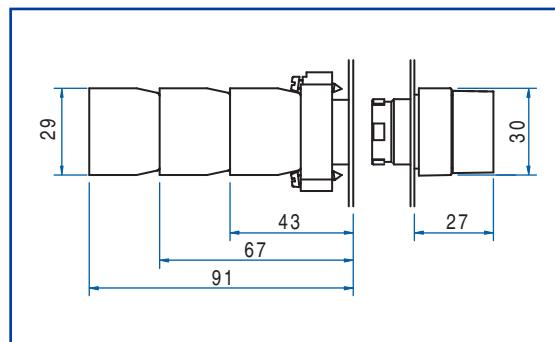
Key Selector



Extended Selector



Selector



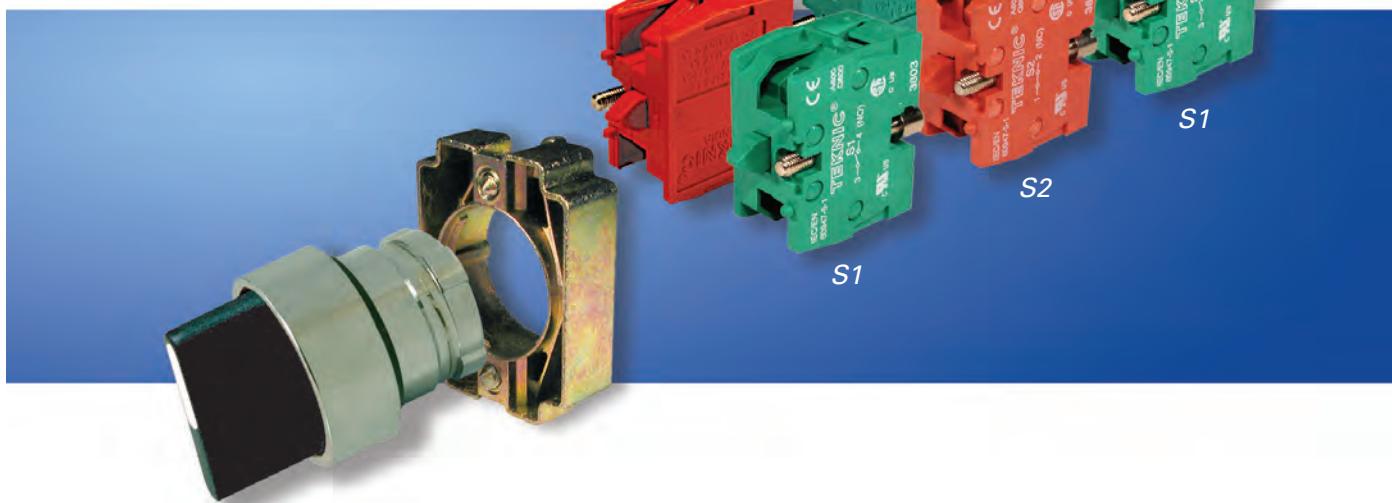
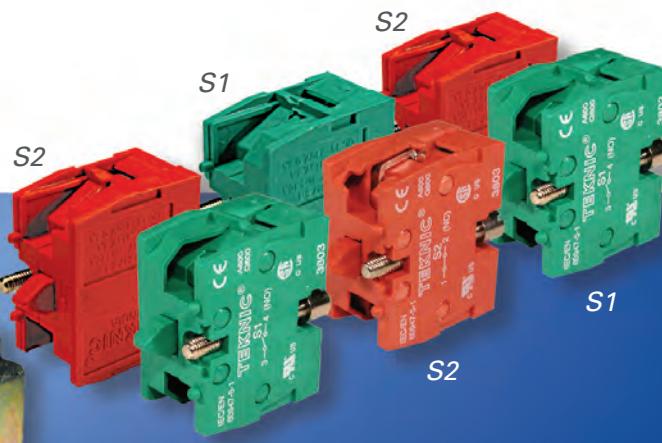
#### 3 POSITION SELECTOR SWITCH CONTACT BLOCK GUIDE

			CONTACT BLOCK GUIDE
x	o	o	1 NO (left)
o	x	o	2 NC in series (side x side)
o	o	x	1 NO (right)
x	x	o	1 NC (right)
o	x	x	1 NC (left)
x	o	x	2 NO in parallel (side x side)

(Left or right as seen from front of operator)

### 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.



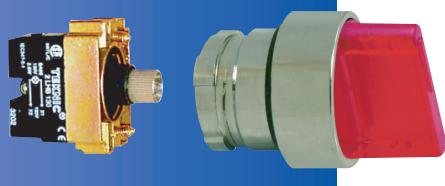
# 22mm LED Illuminated Metal Selector Switch Operators



Certified for  
**NEMA Type 4X**  
12 environment.

## Selector

with bulb holder,  
LED bulb and  
mounting bracket



Other combinations and colors available upon request.  
Please contact Altech for further information and part numbers.

**XXX = Voltage Codes**

<b>012</b>	=	12VAC/DC
<b>024</b>	=	24VAC/DC
<b>048</b>	=	48VAC/DC
<b>110</b>	=	110VAC/DC
<b>230</b>	=	230VAC
<b>230D</b>	=	230VDC

**SAMPLE  
ASSEMBLY**



Push button assemblies are available  
in a variety of custom configurations.



Replacement  
bulbs available.  
See page 39.

## Color      Function      Cat No.

### 2 Position

<input type="checkbox"/>	White		Maintained	2ASL1LB-1-XXX
<input checked="" type="checkbox"/>	Green		Maintained	2ASL3LB-1-XXX
<input type="checkbox"/>	Red		Maintained	2ASL4LB-1-XXX
<input type="checkbox"/>	Amber		Maintained	2ASL5LB-1-XXX
<input type="checkbox"/>	Blue		Maintained	2ASL6LB-1-XXX
<input type="checkbox"/>	Clear		Maintained	2ASL7LB-1-XXX
<input type="checkbox"/>	Yellow		Maintained	2ASL8LB-1-XXX

### 2 Position

<input type="checkbox"/>	White		Spring Return	2ASL1LB-2-XXX
<input checked="" type="checkbox"/>	Green		Spring Return	2ASL3LB-2-XXX
<input type="checkbox"/>	Red		Spring Return	2ASL4LB-2-XXX
<input type="checkbox"/>	Amber		Spring Return	2ASL5LB-2-XXX
<input type="checkbox"/>	Blue		Spring Return	2ASL6LB-2-XXX
<input type="checkbox"/>	Clear		Spring Return	2ASL7LB-2-XXX
<input type="checkbox"/>	Yellow		Spring Return	2ASL8LB-2-XXX

### 3 Position

<input type="checkbox"/>	White		Maintained	2ASL1LB-3-XXX
<input checked="" type="checkbox"/>	Green		Maintained	2ASL3LB-3-XXX
<input type="checkbox"/>	Red		Maintained	2ASL4LB-3-XXX
<input type="checkbox"/>	Amber		Maintained	2ASL5LB-3-XXX
<input type="checkbox"/>	Blue		Maintained	2ASL6LB-3-XXX
<input type="checkbox"/>	Clear		Maintained	2ASL7LB-3-XXX
<input type="checkbox"/>	Yellow		Maintained	2ASL8LB-3-XXX

### 3 Position, spring return from left and right

<input type="checkbox"/>	White		Spring Return	2ASL1LB-4-XXX
<input checked="" type="checkbox"/>	Green		Spring Return	2ASL3LB-4-XXX
<input type="checkbox"/>	Red		Spring Return	2ASL4LB-4-XXX
<input type="checkbox"/>	Amber		Spring Return	2ASL5LB-4-XXX
<input type="checkbox"/>	Blue		Spring Return	2ASL6LB-4-XXX
<input type="checkbox"/>	Clear		Spring Return	2ASL7LB-4-XXX
<input type="checkbox"/>	Yellow		Spring Return	2ASL8LB-4-XXX

### 3 Position, spring return from right

<input type="checkbox"/>	White		Spring Return	2ASL1LB-5-XXX
<input checked="" type="checkbox"/>	Green		Spring Return	2ASL3LB-5-XXX
<input type="checkbox"/>	Red		Spring Return	2ASL4LB-5-XXX
<input type="checkbox"/>	Amber		Spring Return	2ASL5LB-5-XXX
<input type="checkbox"/>	Blue		Spring Return	2ASL6LB-5-XXX
<input type="checkbox"/>	Clear		Spring Return	2ASL7LB-5-XXX
<input type="checkbox"/>	Yellow		Spring Return	2ASL8LB-5-XXX

### 3 Position, spring return from left

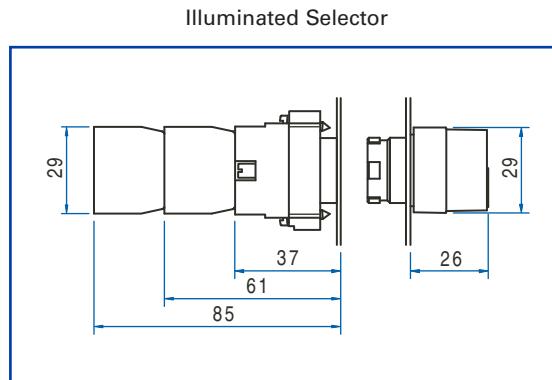
<input type="checkbox"/>	White		Spring Return	2ASL1LB-6-XXX
<input checked="" type="checkbox"/>	Green		Spring Return	2ASL3LB-6-XXX
<input type="checkbox"/>	Red		Spring Return	2ASL4LB-6-XXX
<input type="checkbox"/>	Amber		Spring Return	2ASL5LB-6-XXX
<input type="checkbox"/>	Blue		Spring Return	2ASL6LB-6-XXX
<input type="checkbox"/>	Clear		Spring Return	2ASL7LB-6-XXX
<input type="checkbox"/>	Yellow		Spring Return	2ASL8LB-6-XXX

**Dimensional Drawings**

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

3 POSITION SELECTOR SWITCH CONTACT BLOCK GUIDE		
x	o	o
o	x	o
o	o	x
x	x	o
o	x	x
x	o	x
CONTACTOR BLOCK GUIDE		
		1 NO (left)
		2 NC in series (side x side)
		1 NO (right)
		1 NC (right)
		1 NC (left)
		2 NO in parallel (side x side)

(Left or right as seen from front of operator)

**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	<b>S1</b>
Normally Closed Silver	<b>S2</b>
Normally Open Gold Plated	<b>S3</b>
Normally Closed Gold Plated	<b>S4</b>

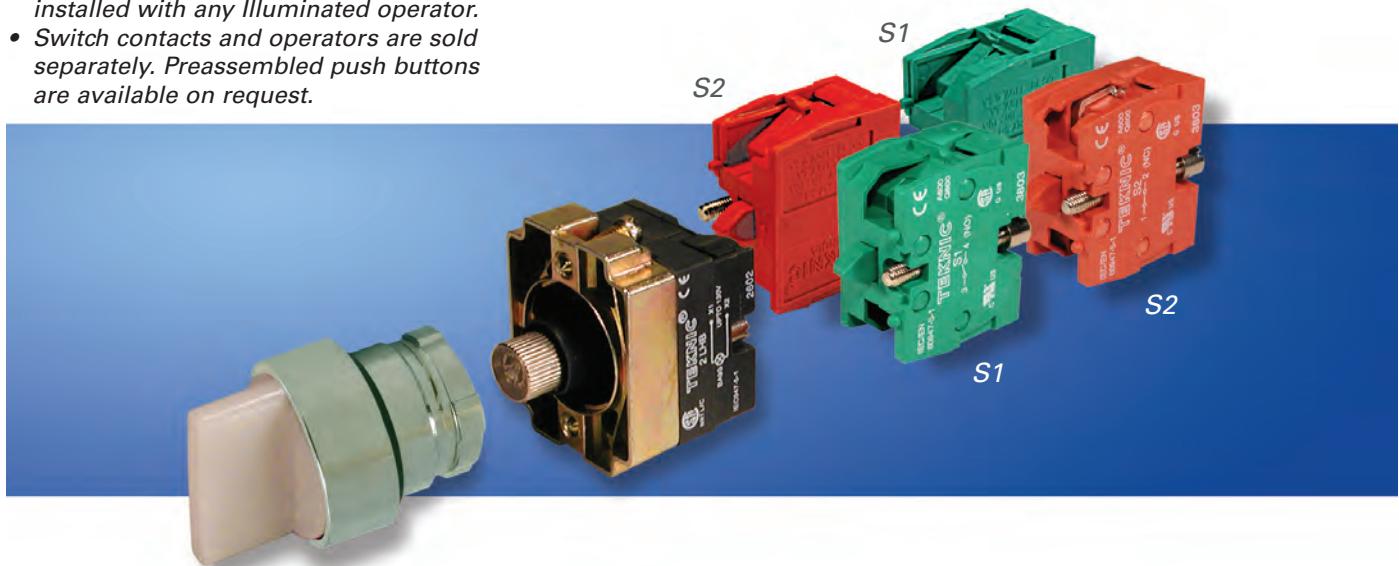
**Base Mount\***

Normally Open Silver	<b>S5</b>
Normally Closed Silver	<b>S6</b>
Normally Open Gold Plated	<b>S7</b>
Normally Closed Gold Plated	<b>S8</b>

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

**Exploded Assembly View**

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



# 22mm LED Illuminated Metal Projecting Operators



Certified for  
**NEMA Type 4X**  
12 environment.

**Projecting  
Momentary**  
with bulb, bulb holder  
and mounting bracket



**SAMPLE  
ASSEMBLY**



Replacement bulbs  
available.  
See page 39.

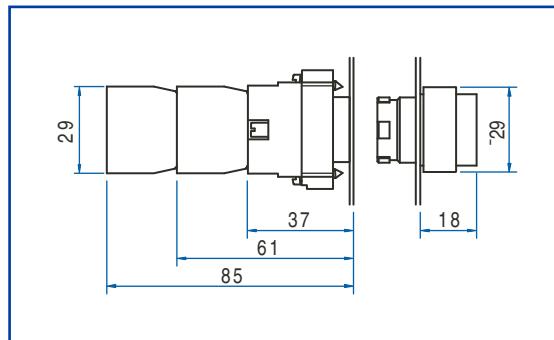
Color	Voltage	Cat No.
<input type="checkbox"/> White	12V AC/DC	2ALP1LB-012
<input checked="" type="checkbox"/> Green	12V AC/DC	2ALP3LB-012
<input type="checkbox"/> Red	12V AC/DC	2ALP4LB-012
<input type="checkbox"/> Amber	12V AC/DC	2ALP5LB-012
<input type="checkbox"/> Blue	12V AC/DC	2ALP6LB-012
<input type="checkbox"/> Clear	12V AC/DC	2ALP7LB-012
<input type="checkbox"/> Yellow	12V AC/DC	2ALP8LB-012
<b>24V AC/DC</b>		
<input type="checkbox"/> White	24V AC/DC	2ALP1LB-024
<input checked="" type="checkbox"/> Green	24V AC/DC	2ALP3LB-024
<input type="checkbox"/> Red	24V AC/DC	2ALP4LB-024
<input type="checkbox"/> Amber	24V AC/DC	2ALP5LB-024
<input type="checkbox"/> Blue	24V AC/DC	2ALP6LB-024
<input type="checkbox"/> Clear	24V AC/DC	2ALP7LB-024
<input type="checkbox"/> Yellow	24V AC/DC	2ALP8LB-024
<b>48V AC/DC</b>		
<input type="checkbox"/> White	48V AC/DC	2ALP1LB-048
<input checked="" type="checkbox"/> Green	48V AC/DC	2ALP3LB-048
<input type="checkbox"/> Red	48V AC/DC	2ALP4LB-048
<input type="checkbox"/> Amber	48V AC/DC	2ALP5LB-048
<input type="checkbox"/> Blue	48V AC/DC	2ALP6LB-048
<input type="checkbox"/> Clear	48V AC/DC	2ALP7LB-048
<input type="checkbox"/> Yellow	48V AC/DC	2ALP8LB-048
<b>110V AC</b>		
<input type="checkbox"/> White	110V AC	2ALP1LB-110
<input checked="" type="checkbox"/> Green	110V AC	2ALP3LB-110
<input type="checkbox"/> Red	110V AC	2ALP4LB-110
<input type="checkbox"/> Amber	110V AC	2ALP5LB-110
<input type="checkbox"/> Blue	110V AC	2ALP6LB-110
<input type="checkbox"/> Clear	110V AC	2ALP7LB-110
<input type="checkbox"/> Yellow	110V AC	2ALP8LB-110
<b>110V DC</b>		
<input type="checkbox"/> White	110V DC	2ALP1LB-110D
<input checked="" type="checkbox"/> Green	110V DC	2ALP3LB-110D
<input type="checkbox"/> Red	110V DC	2ALP4LB-110D
<input type="checkbox"/> Amber	110V DC	2ALP5LB-110D
<input type="checkbox"/> Blue	110V DC	2ALP6LB-110D
<input type="checkbox"/> Clear	110V DC	2ALP7LB-110D
<input type="checkbox"/> Yellow	110V DC	2ALP8LB-110D
<b>230V AC</b>		
<input type="checkbox"/> White	230V AC	2ALP1LB-230
<input checked="" type="checkbox"/> Green	230V AC	2ALP3LB-230
<input type="checkbox"/> Red	230V AC	2ALP4LB-230
<input type="checkbox"/> Amber	230V AC	2ALP5LB-230
<input type="checkbox"/> Blue	230V AC	2ALP6LB-230
<input type="checkbox"/> Clear	230V AC	2ALP7LB-230
<input type="checkbox"/> Yellow	230V AC	2ALP8LB-230
<b>230V DC</b>		
<input type="checkbox"/> White	230V DC	2ALP1LB-230D
<input checked="" type="checkbox"/> Green	230V DC	2ALP3LB-230D
<input type="checkbox"/> Red	230V DC	2ALP4LB-230D
<input type="checkbox"/> Amber	230V DC	2ALP5LB-230D
<input type="checkbox"/> Blue	230V DC	2ALP6LB-230D
<input type="checkbox"/> Clear	230V DC	2ALP7LB-230D
<input type="checkbox"/> Yellow	230V DC	2ALP8LB-230D

## 22mm LED Illuminated Metal Projecting Operators

### Dimensional Drawings

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

Projecting Momentary



### 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	<b>S1</b>
Normally Closed Silver	<b>S2</b>
Normally Open Gold Plated	<b>S3</b>
Normally Closed Gold Plated	<b>S4</b>

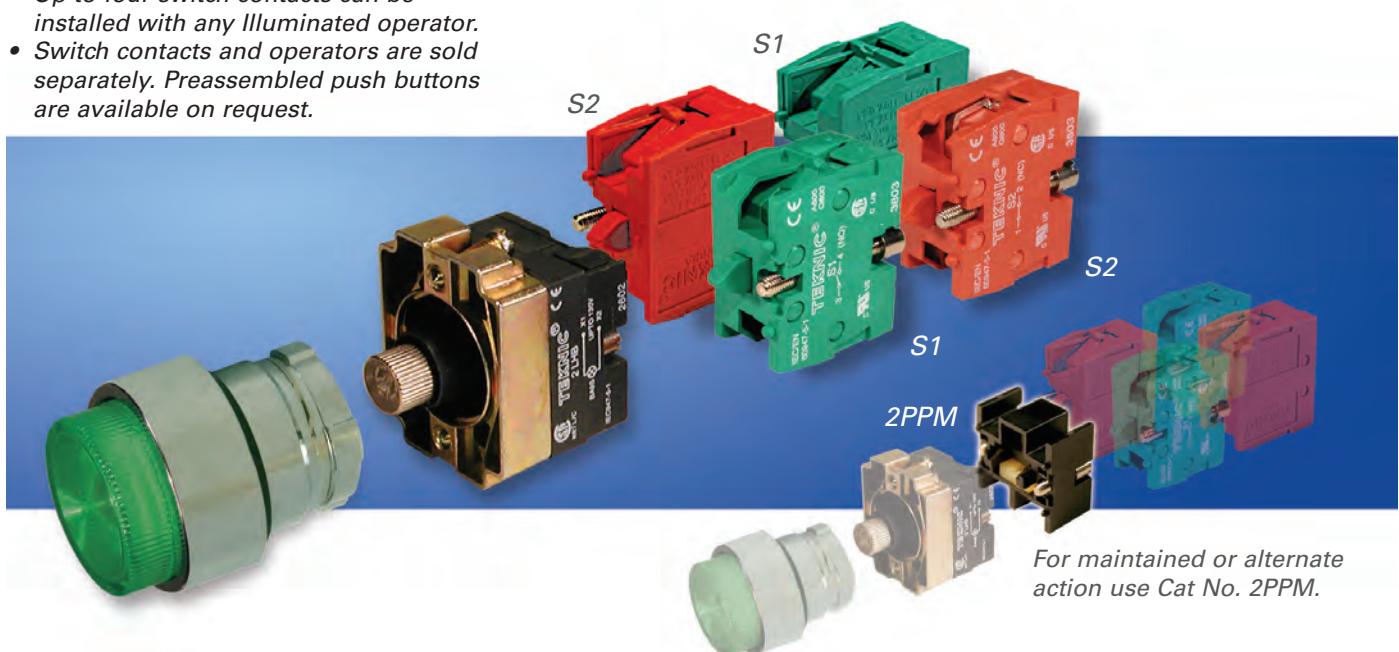
#### Base Mount\*

Normally Open Silver	<b>S5</b>
Normally Closed Silver	<b>S6</b>
Normally Open Gold Plated	<b>S7</b>
Normally Closed Gold Plated	<b>S8</b>

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

### Exploded Assembly View

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



# 22mm LED Illuminated Metal Flush Operators



Certified for  
**NEMA Type 4X**  
12 environment.

**Flush**  
**Momentary**  
with bulb, bulb holder  
and mounting bracket



**SAMPLE  
ASSEMBLY**



For installation of a metal operator in the plastic enclosure a Cat No. ADW washer is required.



Replacement bulbs  
available.  
See page 39.

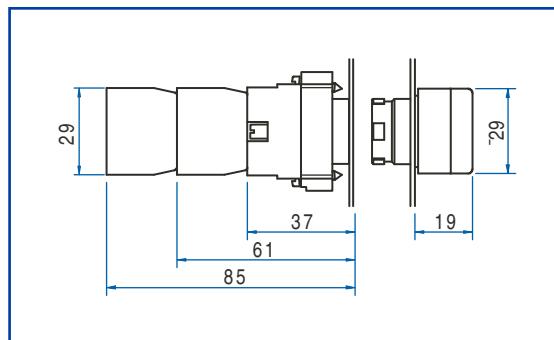
<b>Color</b>	<b>Voltage</b>	<b>Cat No.</b>
<b>12V AC/DC</b>		
<input type="checkbox"/> White	12V AC/DC	2ALF1LB-012
<input checked="" type="checkbox"/> Green	12V AC/DC	2ALF3LB-012
<input type="checkbox"/> Red	12V AC/DC	2ALF4LB-012
<input type="checkbox"/> Amber	12V AC/DC	2ALF5LB-012
<input type="checkbox"/> Blue	12V AC/DC	2ALF6LB-012
<input type="checkbox"/> Clear	12V AC/DC	2ALF7LB-012
<input type="checkbox"/> Yellow	12V AC/DC	2ALF8LB-012
<b>24V AC/DC</b>		
<input type="checkbox"/> White	24V AC/DC	2ALF1LB-024
<input checked="" type="checkbox"/> Green	24V AC/DC	2ALF3LB-024
<input type="checkbox"/> Red	24V AC/DC	2ALF4LB-024
<input type="checkbox"/> Amber	24V AC/DC	2ALF5LB-024
<input type="checkbox"/> Blue	24V AC/DC	2ALF6LB-024
<input type="checkbox"/> Clear	24V AC/DC	2ALF7LB-024
<input type="checkbox"/> Yellow	24V AC/DC	2ALF8LB-024
<b>48V AC/DC</b>		
<input type="checkbox"/> White	48V AC/DC	2ALF1LB-048
<input checked="" type="checkbox"/> Green	48V AC/DC	2ALF3LB-048
<input type="checkbox"/> Red	48V AC/DC	2ALF4LB-048
<input type="checkbox"/> Amber	48V AC/DC	2ALF5LB-048
<input type="checkbox"/> Blue	48V AC/DC	2ALF6LB-048
<input type="checkbox"/> Clear	48V AC/DC	2ALF7LB-048
<input type="checkbox"/> Yellow	48V AC/DC	2ALF8LB-048
<b>110V AC</b>		
<input type="checkbox"/> White	110V AC	2ALF1LB-110
<input checked="" type="checkbox"/> Green	110V AC	2ALF3LB-110
<input type="checkbox"/> Red	110V AC	2ALF4LB-110
<input type="checkbox"/> Amber	110V AC	2ALF5LB-110
<input type="checkbox"/> Blue	110V AC	2ALF6LB-110
<input type="checkbox"/> Clear	110V AC	2ALF7LB-110
<input type="checkbox"/> Yellow	110V AC	2ALF8LB-110
<b>110V DC</b>		
<input type="checkbox"/> White	110V DC	2ALF1LB-110D
<input checked="" type="checkbox"/> Green	110V DC	2ALF3LB-110D
<input type="checkbox"/> Red	110V DC	2ALF4LB-110D
<input type="checkbox"/> Amber	110V DC	2ALF5LB-110D
<input type="checkbox"/> Blue	110V DC	2ALF6LB-110D
<input type="checkbox"/> Clear	110V DC	2ALF7LB-110D
<input type="checkbox"/> Yellow	110V DC	2ALF8LB-110D
<b>230V AC</b>		
<input type="checkbox"/> White	230V AC	2ALF1LB-230
<input checked="" type="checkbox"/> Green	230V AC	2ALF3LB-230
<input type="checkbox"/> Red	230V AC	2ALF4LB-230
<input type="checkbox"/> Amber	230V AC	2ALF5LB-230
<input type="checkbox"/> Blue	230V AC	2ALF6LB-230
<input type="checkbox"/> Clear	230V AC	2ALF7LB-230
<input type="checkbox"/> Yellow	230V AC	2ALF8LB-230
<b>230V DC</b>		
<input type="checkbox"/> White	230V DC	2ALF1LB-230D
<input checked="" type="checkbox"/> Green	230V DC	2ALF3LB-230D
<input type="checkbox"/> Red	230V DC	2ALF4LB-230D
<input type="checkbox"/> Amber	230V DC	2ALF5LB-230D
<input type="checkbox"/> Blue	230V DC	2ALF6LB-230D
<input type="checkbox"/> Clear	230V DC	2ALF7LB-230D
<input type="checkbox"/> Yellow	230V DC	2ALF8LB-230D

## 22mm LED Illuminated Metal Flush Operators

### Dimensional Drawings

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

Flush Momentary



### 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

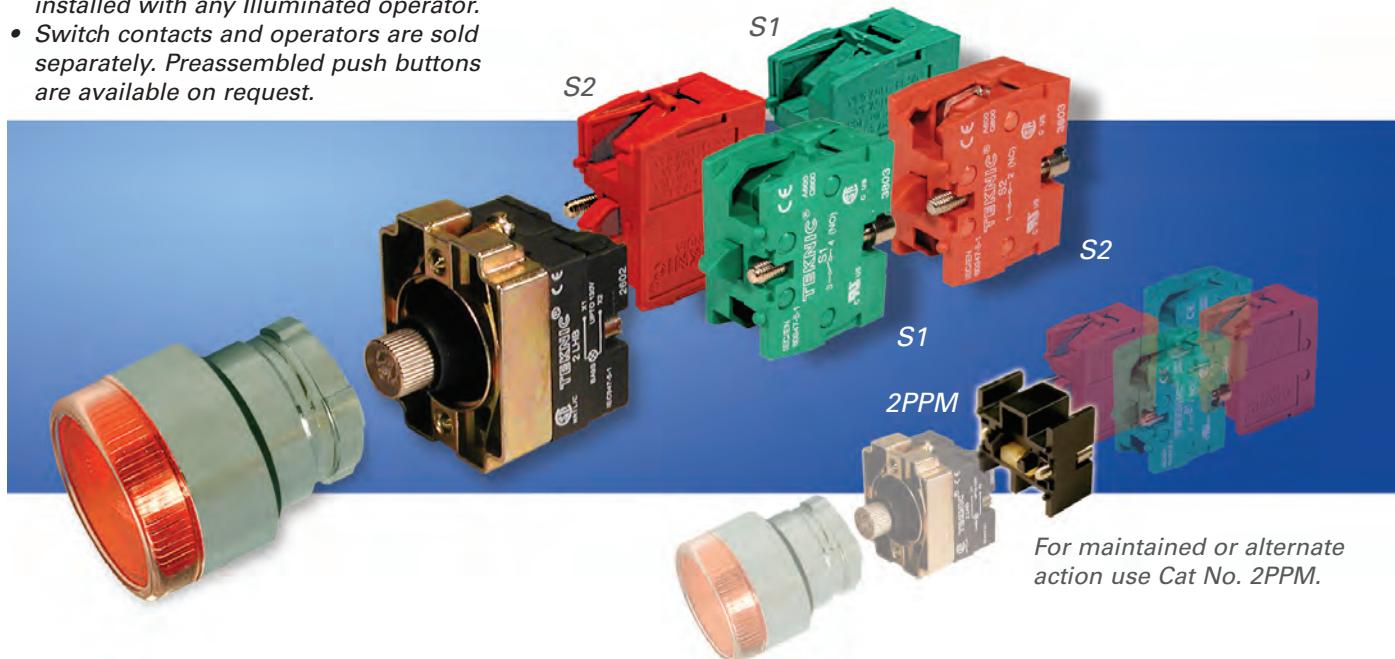
#### Base Mount\*

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.

### Exploded Assembly View

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



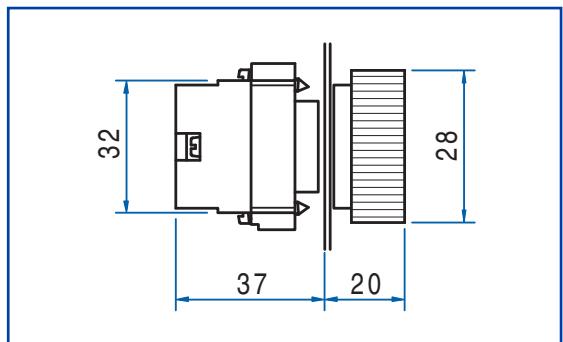
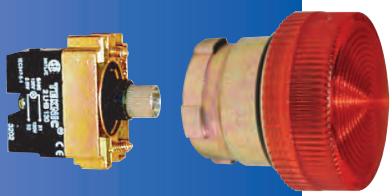
# 22mm LED Metal Pilot Lights



Certified for  
**NEMA Type 4X**  
12 environment.

## Pilot Light

with bulb, bulb holder  
and mounting bracket



Replacement bulbs  
available.  
See page 39.

Color	Voltage	Cat No.
<input type="checkbox"/> White	12V AC/DC	2PLB1LB-012
<input checked="" type="checkbox"/> Green	12V AC/DC	2PLB3LB-012
<input type="checkbox"/> Red	12V AC/DC	2PLB4LB-012
<input type="checkbox"/> Amber	12V AC/DC	2PLB5LB-012
<input type="checkbox"/> Blue	12V AC/DC	2PLB6LB-012
<input type="checkbox"/> Clear	12V AC/DC	2PLB7LB-012
<input type="checkbox"/> Yellow	12V AC/DC	2PLB8LB-012
<b>24V AC/DC</b>		
<input type="checkbox"/> White	24V AC/DC	2PLB1LB-024
<input checked="" type="checkbox"/> Green	24V AC/DC	2PLB3LB-024
<input type="checkbox"/> Red	24V AC/DC	2PLB4LB-024
<input type="checkbox"/> Amber	24V AC/DC	2PLB5LB-024
<input type="checkbox"/> Blue	24V AC/DC	2PLB6LB-024
<input type="checkbox"/> Clear	24V AC/DC	2PLB7LB-024
<input type="checkbox"/> Yellow	24V AC/DC	2PLB8LB-024
<b>48V AC/DC</b>		
<input type="checkbox"/> White	48V AC/DC	2PLB1LB-048
<input checked="" type="checkbox"/> Green	48V AC/DC	2PLB3LB-048
<input type="checkbox"/> Red	48V AC/DC	2PLB4LB-048
<input type="checkbox"/> Amber	48V AC/DC	2PLB5LB-048
<input type="checkbox"/> Blue	48V AC/DC	2PLB6LB-048
<input type="checkbox"/> Clear	48V AC/DC	2PLB7LB-048
<input type="checkbox"/> Yellow	48V AC/DC	2PLB8LB-048
<b>110V AC</b>		
<input type="checkbox"/> White	110V AC	2PLB1LB-110
<input checked="" type="checkbox"/> Green	110V AC	2PLB3LB-110
<input type="checkbox"/> Red	110V AC	2PLB4LB-110
<input type="checkbox"/> Amber	110V AC	2PLB5LB-110
<input type="checkbox"/> Blue	110V AC	2PLB6LB-110
<input type="checkbox"/> Clear	110V AC	2PLB7LB-110
<input type="checkbox"/> Yellow	110V AC	2PLB8LB-110
<b>110V DC</b>		
<input type="checkbox"/> White	110V DC	2PLB1LB-110D
<input checked="" type="checkbox"/> Green	110V DC	2PLB3LB-110D
<input type="checkbox"/> Red	110V DC	2PLB4LB-110D
<input type="checkbox"/> Amber	110V DC	2PLB5LB-110D
<input type="checkbox"/> Blue	110V DC	2PLB6LB-110D
<input type="checkbox"/> Clear	110V DC	2PLB7LB-110D
<input type="checkbox"/> Yellow	110V DC	2PLB8LB-110D
<b>230V AC</b>		
<input type="checkbox"/> White	230V AC	2PLB1LB-230
<input checked="" type="checkbox"/> Green	230V AC	2PLB3LB-230
<input type="checkbox"/> Red	230V AC	2PLB4LB-230
<input type="checkbox"/> Amber	230V AC	2PLB5LB-230
<input type="checkbox"/> Blue	230V AC	2PLB6LB-230
<input type="checkbox"/> Clear	230V AC	2PLB7LB-230
<input type="checkbox"/> Yellow	230V AC	2PLB8LB-230
<b>230V DC</b>		
<input type="checkbox"/> White	230V DC	2PLB1LB-230D
<input checked="" type="checkbox"/> Green	230V DC	2PLB3LB-230D
<input type="checkbox"/> Red	230V DC	2PLB4LB-230D
<input type="checkbox"/> Amber	230V DC	2PLB5LB-230D
<input type="checkbox"/> Blue	230V DC	2PLB6LB-230D
<input type="checkbox"/> Clear	230V DC	2PLB7LB-230D
<input type="checkbox"/> Yellow	230V DC	2PLB8LB-230D

# 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):	A600: 10A; 600V AC
CSA - C22.2 No. 14-95:	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 <sup>2</sup> ) maximum 2x16 AWG (2 x 1.5 mm <sup>2</sup> ) or 14 AWG (2.5 mm <sup>2</sup> )
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 <sup>2</sup> (20 AWG), max. 2 x 1.5 mm <sup>2</sup> (2x16 AWG) or 1 x 2.5 mm <sup>2</sup> (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.)

# Economy Non-Illuminated Plastic Push Buttons



## Momentary



## Maintained



### Color      Description & Function      Cat No.

#### Momentary

<input type="checkbox"/> White	Flush, 1NO Contact	3PSF110
<input checked="" type="checkbox"/> Black	Flush, 1NO Contact	3PSF210
<input type="checkbox"/> Green	Flush, 1NO Contact	3PSF310
<input type="checkbox"/> Red	Flush, 1NO Contact	3PSF410
<input type="checkbox"/> Blue	Flush, 1NO Contact	3PSF610
<input type="checkbox"/> Yellow	Flush, 1NO Contact	3PSF810
<input type="checkbox"/> White	Flush, 1NC Contact	3PSF101
<input checked="" type="checkbox"/> Black	Flush, 1NC Contact	3PSF201
<input type="checkbox"/> Green	Flush, 1NC Contact	3PSF301
<input type="checkbox"/> Red	Flush, 1NC Contact	3PSF401
<input type="checkbox"/> Blue	Flush, 1NC Contact	3PSF601
<input type="checkbox"/> Yellow	Flush, 1NC Contact	3PSF801
<input type="checkbox"/> White	Flush, 1NO + 1NC Contact	3PSF111
<input checked="" type="checkbox"/> Black	Flush, 1NO + 1NC Contact	3PSF211
<input type="checkbox"/> Green	Flush, 1NO + 1NC Contact	3PSF311
<input type="checkbox"/> Red	Flush, 1NO + 1NC Contact	3PSF411
<input type="checkbox"/> Blue	Flush, 1NO + 1NC Contact	3PSF611
<input type="checkbox"/> Yellow	Flush, 1NO + 1NC Contact	3PSF811
<input type="checkbox"/> White	Flush, 2NO Contact	3PSF120
<input checked="" type="checkbox"/> Black	Flush, 2NO Contact	3PSF220
<input type="checkbox"/> Green	Flush, 2NO Contact	3PSF320
<input type="checkbox"/> Red	Flush, 2NO Contact	3PSF420
<input type="checkbox"/> Blue	Flush, 2NO Contact	3PSF620
<input type="checkbox"/> Yellow	Flush, 2NO Contact	3PSF820
<input type="checkbox"/> White	Flush, 2NC Contact	3PSF102
<input checked="" type="checkbox"/> Black	Flush, 2NC Contact	3PSF202
<input type="checkbox"/> Green	Flush, 2NC Contact	3PSF302
<input type="checkbox"/> Red	Flush, 2NC Contact	3PSF402
<input type="checkbox"/> Blue	Flush, 2NC Contact	3PSF602
<input type="checkbox"/> Yellow	Flush, 2NC Contact	3PSF802

#### Maintained

<input type="checkbox"/> White	Flush, 1NO Push-Push	3PSFPP110
<input checked="" type="checkbox"/> Black	Flush, 1NO Push-Push	3PSFPP210
<input type="checkbox"/> Green	Flush, 1NO Push-Push	3PSFPP310
<input type="checkbox"/> Red	Flush, 1NO Push-Push	3PSFPP410
<input type="checkbox"/> Blue	Flush, 1NO Push-Push	3PSFPP610
<input type="checkbox"/> Yellow	Flush, 1NO Push-Push	3PSFPP810
<input type="checkbox"/> White	Flush, 1NC Push-Push	3PSFPP101
<input checked="" type="checkbox"/> Black	Flush, 1NC Push-Push	3PSFPP201
<input type="checkbox"/> Green	Flush, 1NC Push-Push	3PSFPP301
<input type="checkbox"/> Red	Flush, 1NC Push-Push	3PSFPP401
<input type="checkbox"/> Blue	Flush, 1NC Push-Push	3PSFPP601
<input type="checkbox"/> Yellow	Flush, 1NC Push-Push	3PSFPP801
<input type="checkbox"/> White	Flush, 1NO + 1NC Push-Push	3PSFPP111
<input checked="" type="checkbox"/> Black	Flush, 1NO + 1NC Push-Push	3PSFPP211
<input type="checkbox"/> Green	Flush, 1NO + 1NC Push-Push	3PSFPP311
<input type="checkbox"/> Red	Flush, 1NO + 1NC Push-Push	3PSFPP411
<input type="checkbox"/> Blue	Flush, 1NO + 1NC Push-Push	3PSFPP611
<input type="checkbox"/> Yellow	Flush, 1NO + 1NC Push-Push	3PSFPP811
<input type="checkbox"/> White	Flush, 2NO Push-Push	3PSPP120
<input checked="" type="checkbox"/> Black	Flush, 2NO Push-Push	3PSPP220
<input type="checkbox"/> Green	Flush, 2NO Push-Push	3PSPP320
<input type="checkbox"/> Red	Flush, 2NO Push-Push	3PSPP420
<input type="checkbox"/> Blue	Flush, 2NO Push-Push	3PSPP620
<input type="checkbox"/> Yellow	Flush, 2NO Push-Push	3PSPP820
<input type="checkbox"/> White	Flush, 2NC Push-Push	3PSPP102
<input checked="" type="checkbox"/> Black	Flush, 2NC Push-Push	3PSPP202
<input type="checkbox"/> Green	Flush, 2NC Push-Push	3PSPP302
<input type="checkbox"/> Red	Flush, 2NC Push-Push	3PSPP402
<input type="checkbox"/> Blue	Flush, 2NC Push-Push	3PSPP602
<input type="checkbox"/> Yellow	Flush, 2NC Push-Push	3PSPP802

# Economy Non-Illuminated Plastic Push Buttons Specifications

## A. Mechanical Characteristics

Contact Operation	NO/NC Slow Break
Operating Travel	Changing NC status = 2mm Changing NO status = 2mm Total travel = 3.5mm
Operating Force for 3PSF Series	Changing NC status = 4.22mm Changing NO status = 5.60mm Travel required to change NC status = 0.65mm Travel required to change NO status = 1.65 to 1.98mm Total travel = 3.8mm
Contact Configurations	1NO; 1NO + 1NC; 2NC
Terminal Torque	0.5Nm / 4.5lbs. in.

## B. Mechanical Durability

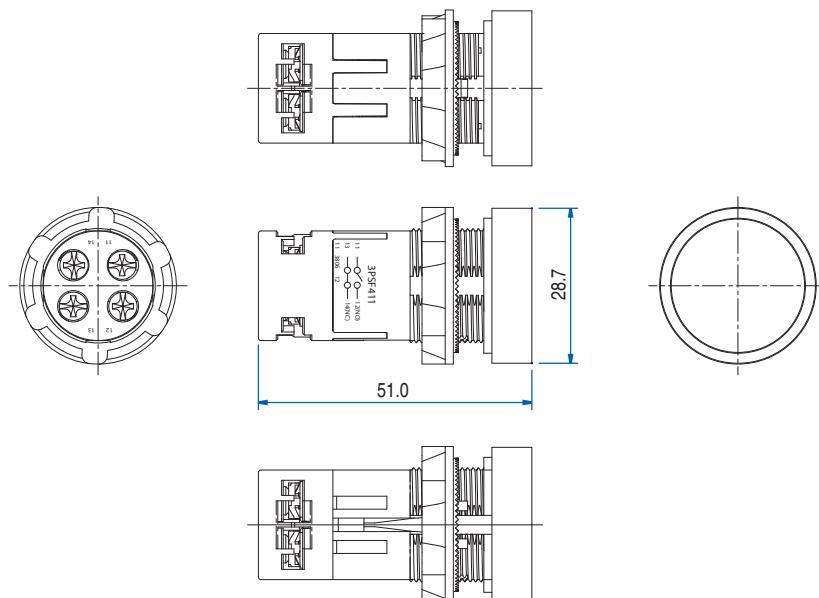
Push Button, Spring Return	1 Million Operations
Push-Push Type	100,000 Operations
Applicable Standard	UL508; IS13947-5-1; CSA 22.2
Degree of Protection	IP65 (as per IS 13947)
Temperature Range	-25° to +85°C (-13°F to 180°F)

## C. Electrical Characteristics

Rating	<p><i>For AC:</i> C300= 120V, make current 15A &amp; break current 1.5A (thermal current=2.5A)</p> <p><i>For DC:</i> R300= 125V, make or break current 0.22A (thermal current=1.0A)</p>
Terminal Capacity for wiring	2 X 1.5mm <sup>2</sup> ; 1 X 0.5mm <sup>2</sup> (min); 1 X 2.5mm <sup>2</sup> (max)
Contact Material	<ul style="list-style-type: none"> <li>Moving contact = Phosphor Bronze</li> <li>Fixed Contact = Brass silver plated 2 microns</li> </ul>
Short Circuit Protection	4A fuse
Dielectric Test	2.5KV
Rated insulation Resistance	500M ohm
Rated Thermal Current	2.5A

## Dimensional Drawings

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



# Unibody LED Indicator Plastic Pilot Lights



E225660

## Pilot Lights with integral LED



Multi color LED pilot light  
Clear Lens / Red / Green LED



### Color

### Description

### Cat No.

<input type="checkbox"/>	White Lens/Yellow LED	12V AC/DC	3PLBR1L-012
<input type="checkbox"/>	White Lens/Yellow LED	24V AC/DC	3PLBR1L-024
<input type="checkbox"/>	White Lens/Yellow LED	48V AC/DC	3PLBR1L-048
<input type="checkbox"/>	White Lens/Yellow LED	110V AC*	3PLBR1L-110
<input type="checkbox"/>	White Lens/Yellow LED	230V AC*	3PLBR1L-230

<input type="checkbox"/>	White Lens/White LED	12V AC/DC	3PLBR1LS-012
<input type="checkbox"/>	White Lens/White LED	24V AC/DC	3PLBR1LS-024
<input type="checkbox"/>	White Lens/White LED	48V AC/DC	3PLBR1LS-048
<input type="checkbox"/>	White Lens/White LED	110V AC*	3PLBR1LS-110
<input type="checkbox"/>	White Lens/White LED	230V AC*	3PLBR1LS-230

<input type="checkbox"/>	Green Lens/Green LED	12V AC/DC	3PLBR3L-012
<input type="checkbox"/>	Green Lens/Green LED	24V AC/DC	3PLBR3L-024
<input type="checkbox"/>	Green Lens/Green LED	48V AC/DC	3PLBR3L-048
<input type="checkbox"/>	Green Lens/Green LED	110V AC*	3PLBR3L-110
<input type="checkbox"/>	Green Lens/Green LED	230V AC*	3PLBR3L-230

<input type="checkbox"/>	Red Lens/Red LED	12V AC/DC	3PLBR4L-012
<input type="checkbox"/>	Red Lens/Red LED	24V AC/DC	3PLBR4L-024
<input type="checkbox"/>	Red Lens/Red LED	48V AC/DC	3PLBR4L-048
<input type="checkbox"/>	Red Lens/Red LED	110V AC*	3PLBR4L-110
<input type="checkbox"/>	Red Lens/Red LED	230V AC*	3PLBR4L-230

<input type="checkbox"/>	Clear Lens /Red/Green LED	12V AC/DC	3PLBR34L-012
<input type="checkbox"/>	Clear Lens /Red/Green LED	24V AC/DC	3PLBR34L-024
<input type="checkbox"/>	Clear Lens /Red/Green LED	48V AC/DC	3PLBR34L-048
<input type="checkbox"/>	Clear Lens /Red/Green LED	110V AC*	3PLBR34L-110
<input type="checkbox"/>	Clear Lens /Red/Green LED	230V AC*	3PLBR34L-230

<input type="checkbox"/>	Amber Lens/Amber LED	12V AC/DC	3PLBR5L-012
<input type="checkbox"/>	Amber Lens/Amber LED	24V AC/DC	3PLBR5L-024
<input type="checkbox"/>	Amber Lens/Amber LED	48V AC/DC	3PLBR5L-048
<input type="checkbox"/>	Amber Lens/Amber LED	110V AC*	3PLBR5L-110
<input type="checkbox"/>	Amber Lens/Amber LED	230V AC*	3PLBR5L-230

<input type="checkbox"/>	Blue Lens/Blue LED	12V AC/DC	3PLBR6L-012
<input type="checkbox"/>	Blue Lens/Blue LED	24V AC/DC	3PLBR6L-024
<input type="checkbox"/>	Blue Lens/Blue LED	48V AC/DC	3PLBR6L-048
<input type="checkbox"/>	Blue Lens/Blue LED	110V AC*	3PLBR6L-110
<input type="checkbox"/>	Blue Lens/Blue LED	230V AC*	3PLBR6L-230

<input type="checkbox"/>	Clear Lens/Yellow LED	12V AC/DC	3PLBR7L-012
<input type="checkbox"/>	Clear Lens/Yellow LED	24V AC/DC	3PLBR7L-024
<input type="checkbox"/>	Clear Lens/Yellow LED	48V AC/DC	3PLBR7L-048
<input type="checkbox"/>	Clear Lens/Yellow LED	110V AC*	3PLBR7L-110
<input type="checkbox"/>	Clear Lens/Yellow LED	230V AC*	3PLBR7L-230

<input type="checkbox"/>	Clear Lens/White LED	12V AC/DC	3PLBR7LS-012
<input type="checkbox"/>	Clear Lens/White LED	24V AC/DC	3PLBR7LS-024
<input type="checkbox"/>	Clear Lens/White LED	48V AC/DC	3PLBR7LS-048
<input type="checkbox"/>	Clear Lens/White LED	110V AC*	3PLBR7LS-110
<input type="checkbox"/>	Clear Lens/White LED	230V AC*	3PLBR7LS-230

<input type="checkbox"/>	Yellow Lens/Yellow LED	12V AC/DC	3PLBR8L-012
<input type="checkbox"/>	Yellow Lens/Yellow LED	24V AC/DC	3PLBR8L-024
<input type="checkbox"/>	Yellow Lens/Yellow LED	48V AC/DC	3PLBR8L-048
<input type="checkbox"/>	Yellow Lens/Yellow LED	110V AC*	3PLBR8L-110
<input type="checkbox"/>	Yellow Lens/Yellow LED	230V AC*	3PLBR8L-230

\*110V DC and 230V DC version is available on request.

# Unibody LED Indicator Plastic Pilot Lights Specifications

## A. Mechanical Characteristics

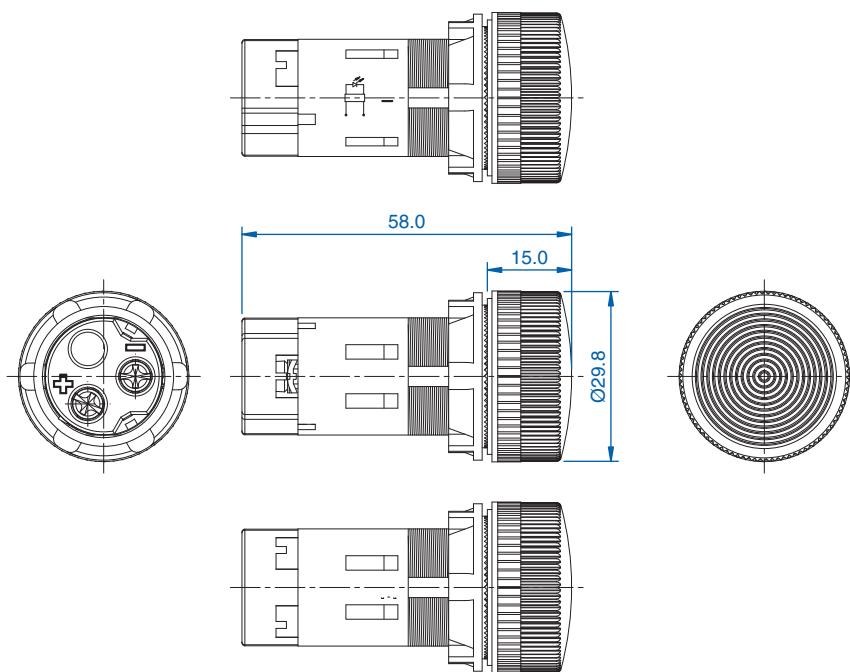
Applicable Standard	UL508 IEC 60947 CSA 22.2
Degree of Protection	IP65 as per IEC 60947,
Temperature Range	-25° to +70°C (-13 to +158°F)
Contact material	Phosphor bronze for LED, PCB contact brass (tin plated)
Corrosion protection	All metallic parts are electroplated for corrosion protection
Terminal Torque	0.5 Nm (4.5 lbs. / in.)
Viewing Angle	More than 100°
Optical Axial intensity	More than 100 mcd for all colors

## B. Electrical Characteristics

Rating	Rated 6V AC/DC to 240V AC and 220V DC, 2W max. (Integral LEDs)
Terminal Capacity	Screw connection 2 X 1.5mm <sup>2</sup> 1 X 0.5mm <sup>2</sup> (min) 1 X 2.5mm <sup>2</sup> (max)
Dielectric Test	2.5KV
Rated insulation Resistance	500M ohm at 1000VDC
Polarity protection	Polarity protection is only in case of DC supply lamps
Low voltage protection	20V for 110V AC & 110V DC 40V for 240V AC & 220V DC (i.e. approx. 20% of Rated Voltage)
Current Consumption	Max. 20mA for AC circuits Max. 15mA for DC circuits

## Dimensional Drawings

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



# 22mm Thermoplastic Enclosures

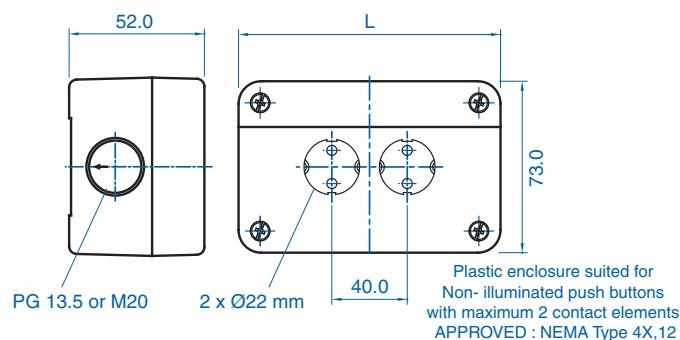
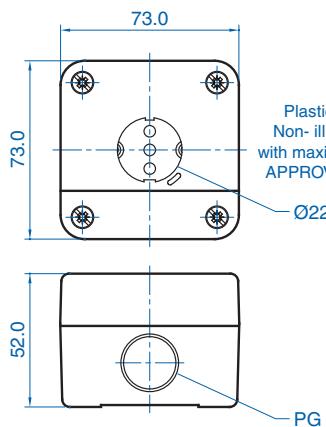


Certified for  
NEMA Type 4X  
12 environment.



## Base Mount Enclosures

Cat. No.	Operator Capacity	Material	Long Description	Dimensions L x W x H	Cable Entry Knockouts	Mounting Hole Size
4003A11	1	Thermo Plastic	White Top/Black Bottom	73 X 73 X 52	2 x M20	(4) - 4.4x6.4
4003C11	2	Thermo Plastic	White Top/Black Bottom	113 X 73 X 52	2 x M20	(4) - 4.4x6.4
4003E11	3	Thermo Plastic	White Top/Black Bottom	153 X 73X 52	2 x M20	(4) - 4.4x6.4
4003G11	4	Thermo Plastic	White Top/Black Bottom	193 X 73 X 52	2 x M20	(4) - 4.4x6.4
4003S11	5	Thermo Plastic	White Top/Black Bottom	233 X 73 X 52	2 x M20	(4) - 4.4x6.4
4003I11	6	Thermo Plastic	White Top/Black Bottom	273 X 73 X 52	2 x M20	(4) - 4.4x6.4
4004A10	1	Thermo Plastic	Yellow Top/Black Bottom	73 X 73 X 52	2 x M20	(4) - 4.4x6.4
4004C10	2	Thermo Plastic	Yellow Top/Black Bottom	113 X 73 X 52	2 x M20	(4) - 4.4x6.4
4004E10	3	Thermo Plastic	Yellow Top/Black Bottom	153 X 73X 52	2 x M20	(4) - 4.4x6.4
4004G10	4	Thermo Plastic	Yellow Top/Black Bottom	193 X 73 X 52	2 x M20	(4) - 4.4x6.4
4004S10	5	Thermo Plastic	Yellow Top/Black Bottom	233 X 73 X 52	2 x M20	(4) - 4.4x6.4
4004I10	6	Thermo Plastic	Yellow Top/Black Bottom	273 X 73 X 52	2 x M20	(4) - 4.4x6.4



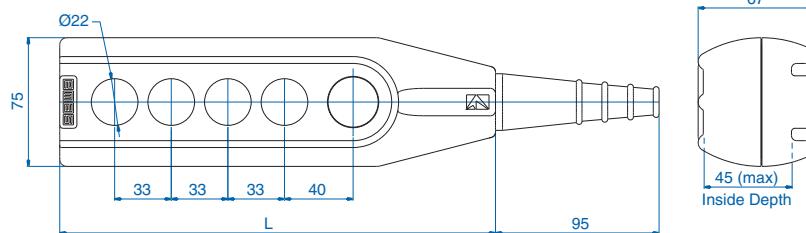
Ambient Temperature: -25°C to 70°C (-13°F to 158°F)

## Control Boxes



Cat. No.	Operator Capacity	Dimensions* LxWxH mm
2PV2X	2	188x75x67
2PV3X	3	188x75x67
2PV4X	4	221x75x67
2PV5X	5	254x75x67
2PV6X	6	287x75x67
2PV7X	7	320x75x67
2PV8X	8	353x75x67
2PV9X	9	386x75x67

2PV5X shown



### Contact Elements and Seal

Cat. No.	Description
S1	Normally open
S2	Normally closed
3PRG1*	Rubber gasket*

\* To achieve IP65 rating for control boxes, this rubber gasket must be used.

## 22mm Thermoplastic Enclosure &amp; Control Box Accessories



Certified for  
**NEMA Type 4X**  
12 environment.

**Flush**  
*Momentary*  
with mounting bracket



**Mushroom**  
*Momentary/Maintained*  
with mounting bracket



**Projecting**  
with mounting bracket



**Selector Switch**  
with mounting bracket



**Mounting Bracket  
for plastic operators**  
Cat. No. P2BRK



**Rotational Washer  
for push-turn E-stop plastic operator**  
Cat. No. 2RLW



**Mounting Nut  
for plastic operators**  
Cat. No. P2MN

## Switch Contacts



### Panel Mount

Normally Open Silver	<b>S1</b>
Normally Closed Silver	<b>S2</b>
Normally Open Gold plated	<b>S3</b>
Normally Closed Gold plated	<b>S4</b>

### Base Mount

Normally Open Silver	<b>S5</b>
Normally Closed Silver	<b>S6</b>
Normally Open Gold plated	<b>S7</b>
Normally Closed Gold plated	<b>S8</b>

\* Only for 22mm Thermoplastic Enclosures.



**Large Rubber Gasket**  
Cat. No. 3PRG1

*Note: Used for Push Buttons that begin in a 3P part number. Also used for control boxes with any type of operator in place of small rubber gasket (2PRG1) to achieve a IP65 rating.*



**Small Rubber Gasket**  
Cat. No. 2PRG1

*Note: Used for Push Buttons that begin in a 2P or P2 part number as a standard gasket.*



**Transparent Silicone Rubber Boot  
for Flush Actuators**

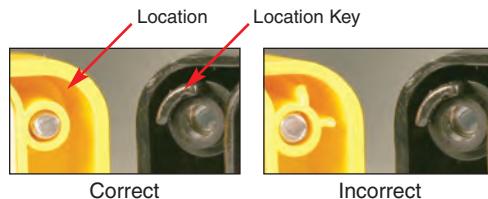
Color: Clear  
Cat. No. 2BT7 (for non-illuminated)  
2ALBT7 (for illuminated)

# 22mm Thermoplastic Enclosure Installation Instructions

## Installation

The enclosure may be installed vertically or horizontally.

1. Unscrew the top half of the enclosure. Some enclosures are supplied with detached cover.
2. Place the bottom half to the desired mounting location using two M4 or 8/32" screws.
3. When wiring is complete, install the top half of the enclosure making sure the location key is in its proper location (see below).



## Intended Use

The unit is a two part non-metallic enclosure with a gasket. Metal and/or Plastic series non-illuminated push buttons & pilot lights can be installed in these enclosures. For illuminated push buttons consider the plastic enclosures on pages 34-35 or GDC (gravity die cast) aluminum enclosures on page 37.

### Features:

1. Protection type IP65 in accordance with IEC 60947.
2. Protection type 4X, 12 in accordance with UL50.

## Preparing for Operation

1. To insert cable, knock out one of the pre-stamped opening.  
For IP65 protection you must use a M20 or PG13 liquid tight strain relief.
2. Install the push button or pilot light in the actuator mounting hole.

## Safety Regulations

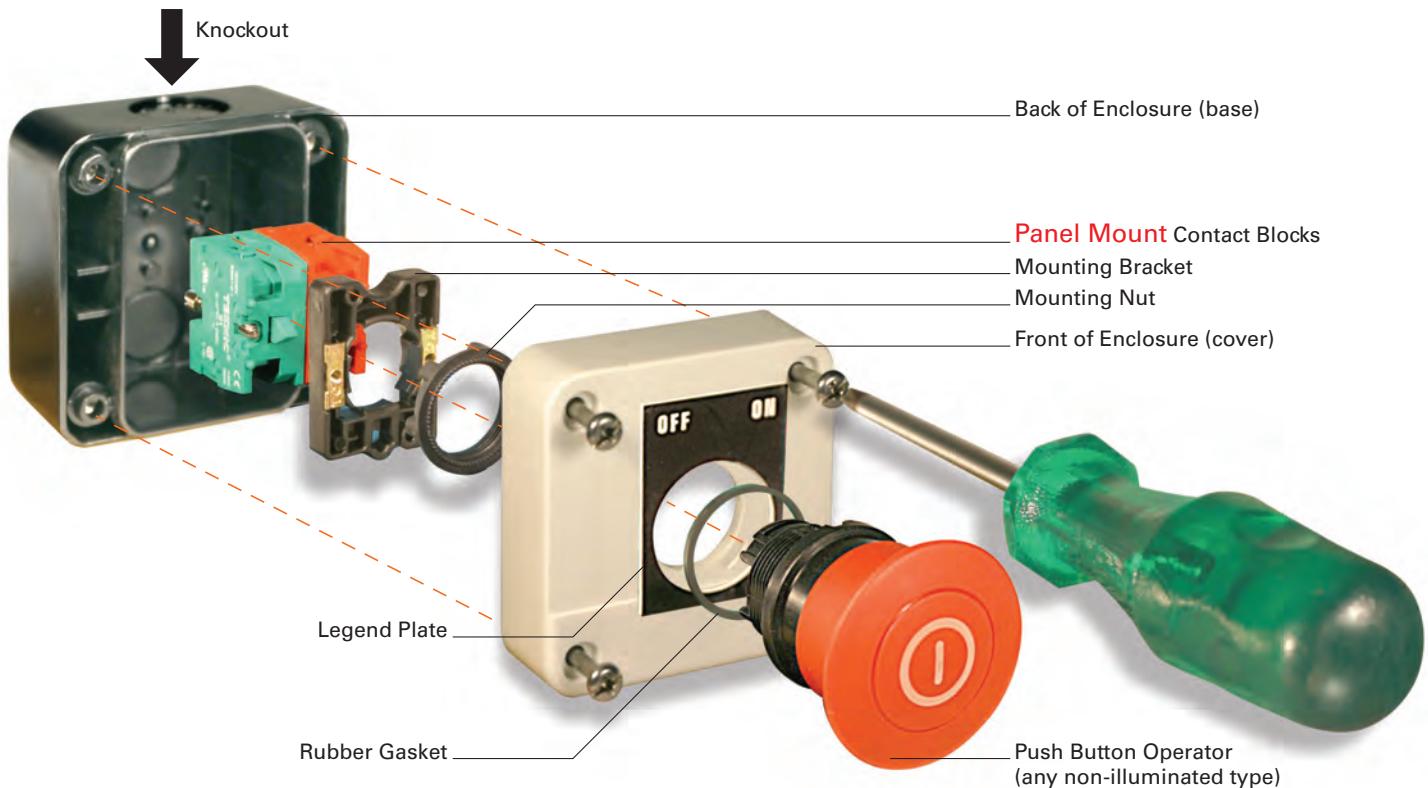
The unit may only be assembled and installed by individuals who are familiar with the installation instructions and the current regulations for health and safety at work and accident prevention. Ensure local regulations compliances are met.

## CAUTION

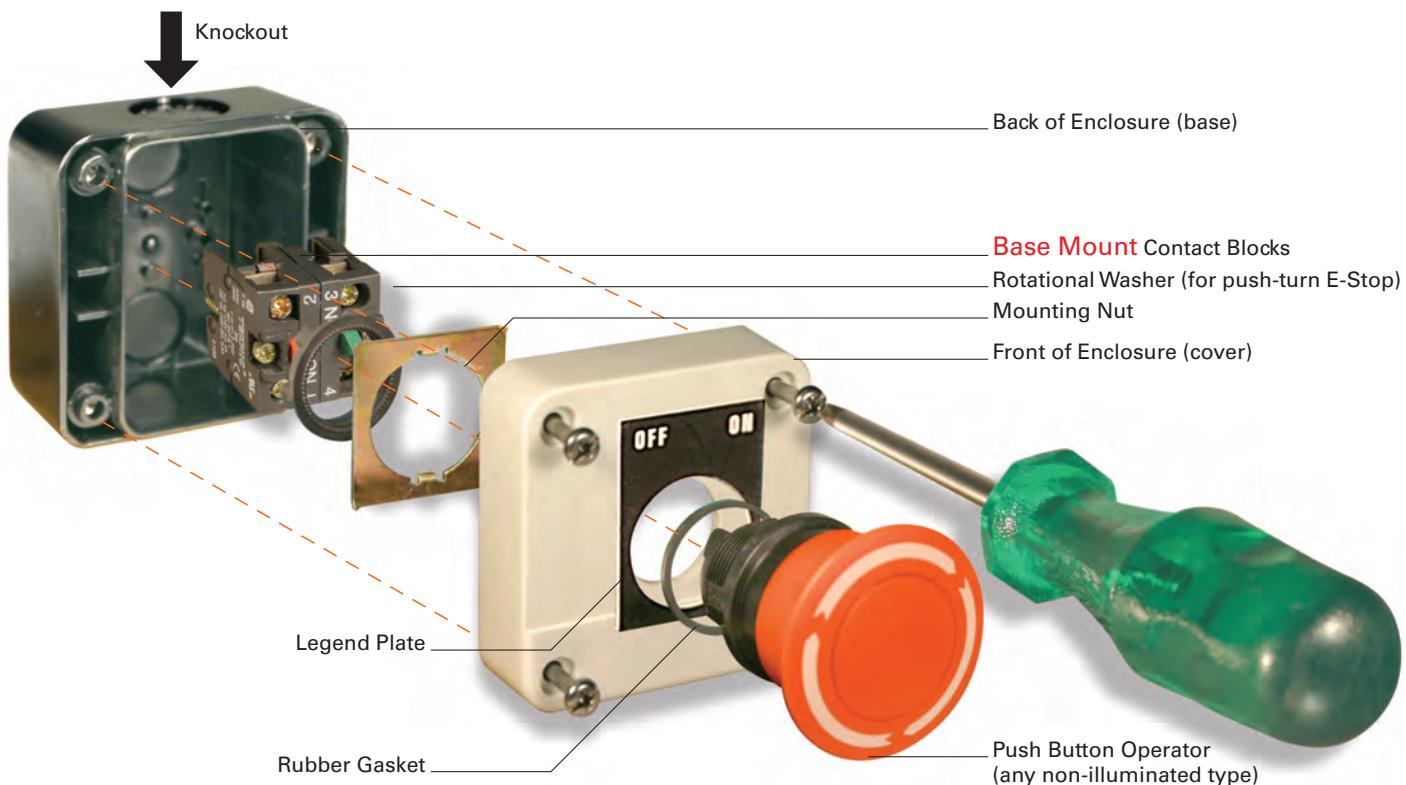
1. Non-metallic enclosures do not provide grounding connections.  
Use grounding jumper wires.
2. The conduit hubs are to be connected to the conduit before being connected to the enclosure.
3. To maintain the environmental rating of this enclosure, install only UL listed or UL recognized conduit hubs or control devices with the same environmental ratings as the enclosure, in compliance with the installation instructions of the device.

## 22mm Thermoplastic Enclosures Assembly Instructions

### Panel Mount Contact Block Installation



### Base Mount Contact Block Installation



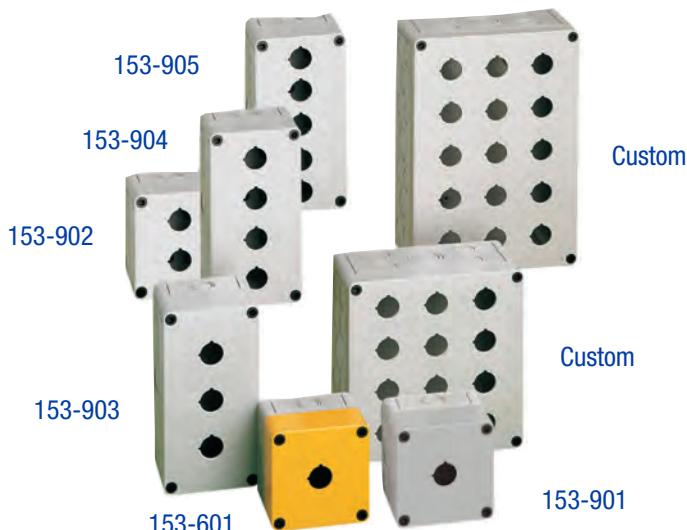
# 22mm Polycarbonate Enclosures

## Polycarbonate Enclosures

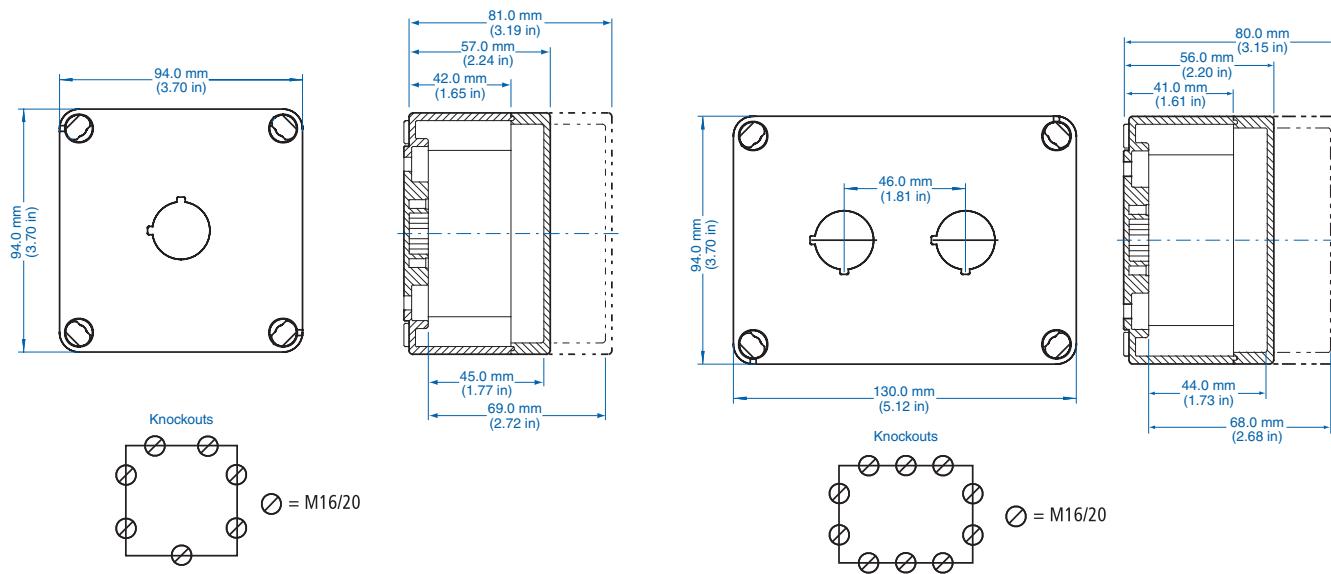
### Standard Features

- Protection Level: IP66\* (Nema 4x)
- Technical: M16/20 Knockout Sidewalls  
22.5 mm Diameter Push Button Holes
- Enclosure Material: Polycarbonate
- Temperature Range: -35°C to 120°C (-31°F to 248°F)
- Gasket Material: Polyurethane
- Color: Light Gray
- Accessories: See section below

\*IP66 when suitable installation devices are used.



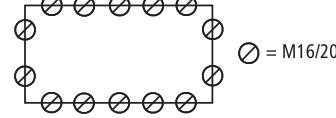
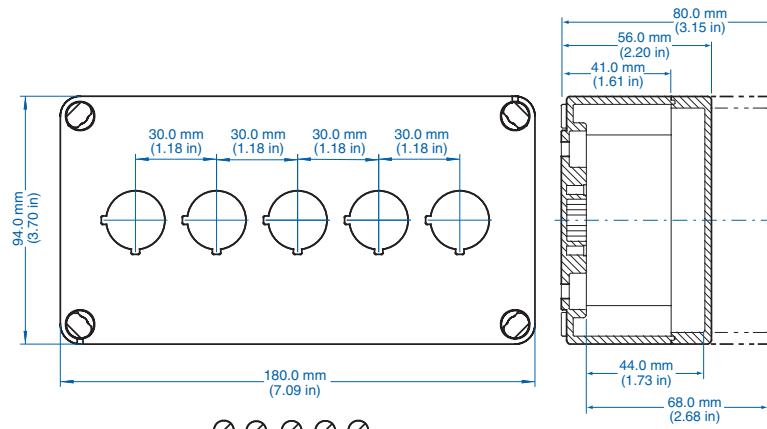
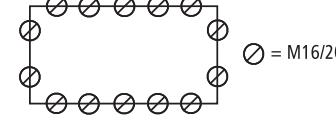
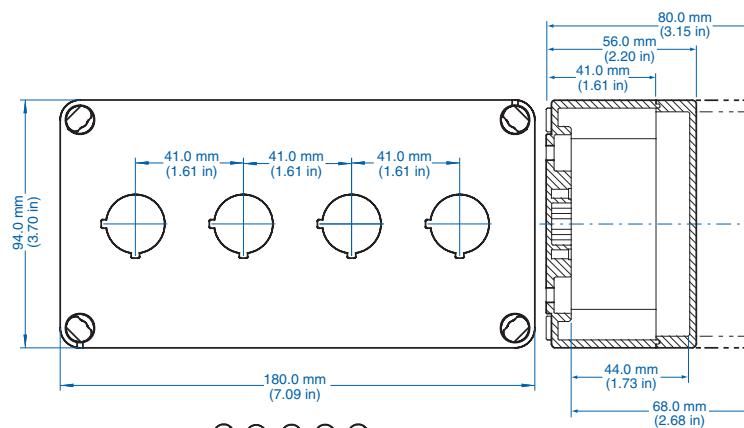
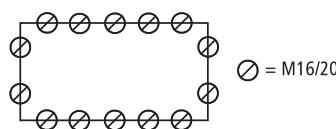
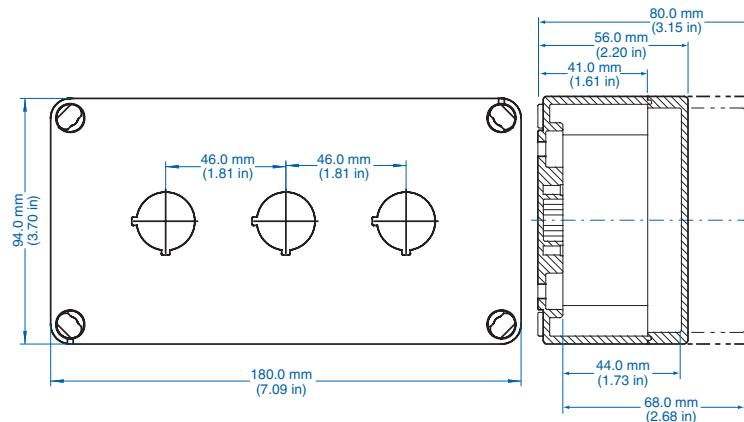
Ordering Information	Cat. No.	Dimensions mm (in)	Width	Height	Std. Pk.
One hole enclosure	153-901	94 mm (3.70 in)	94 mm (3.70 in)	81 mm (3.19 in)	1
One hole enclosure (Yellow cover)	153-601	94 mm (3.70 in)	94 mm (3.70 in)	81 mm (3.19 in)	1
Two hole enclosure	153-902	130 mm (5.12 in)	94 mm (3.70 in)	81 mm (3.19 in)	1
Three hole enclosure	153-903	180 mm (7.09 in)	94 mm (3.70 in)	81 mm (3.19 in)	1
Four hole enclosure	153-904	180 mm (7.09 in)	94 mm (3.70 in)	81 mm (3.19 in)	1
Five hole enclosure	153-905	180 mm (7.09 in)	94 mm (3.70 in)	81 mm (3.19 in)	1
One hole enclosure	153-901/L	94 mm (3.70 in)	94 mm (3.70 in)	57 mm (2.24 in)	1
One hole enclosure (Yellow cover)	153-601/L	94 mm (3.70 in)	94 mm (3.70 in)	57 mm (2.24 in)	1
Two hole enclosure	153-902/L	130 mm (5.12 in)	94 mm (3.70 in)	57 mm (2.24 in)	1
Three hole enclosure	153-903/L	180 mm (7.09 in)	94 mm (3.70 in)	57 mm (2.24 in)	1
Four hole enclosure	153-904/L	180 mm (7.09 in)	94 mm (3.70 in)	57 mm (2.24 in)	1
Five hole enclosure	153-905/L	180 mm (7.09 in)	94 mm (3.70 in)	57 mm (2.24 in)	1
One hole enclosure (extra space)	153-902/1H	130 mm (5.12 in)	94 mm (3.70 in)	57 mm (2.24 in)	1
5308 959		M20 Cord Grip, 5-12mm Cable Dia., Lt Gray			1
7211 981		M20 Locknut, Lt. Gray, PA			1
5308 949		M20 Cord Grip, 5-12mm Cable Dia., Black			1
7211 976		M20 Locknut, Black, PA			1



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

# 22mm Polycarbonate Enclosures

**Altech**



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

# Aluminum Enclosures for 22mm Operators



Certified for  
**NEMA Type 4X**  
12 environment.

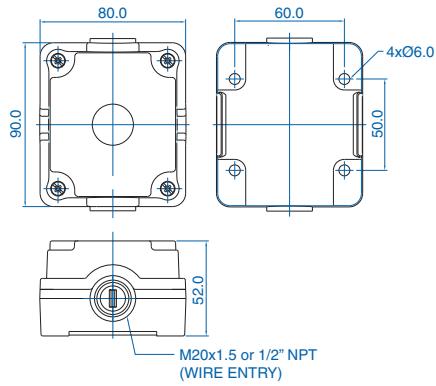
## Aluminum (52mm Height) Pressure Die Cast

For base mount contact blocks and non-illuminated operators. 2 contact blocks maximum per operator.

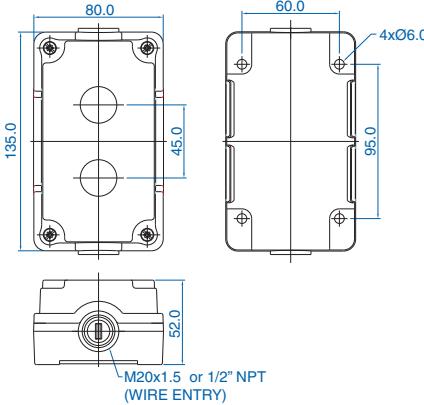


Cat. No.	Operator Capacity	Color Top/ Bottom	Construction	Dimensions LxWxH mm (in.)	Cable Entry Thread Size	Mounting Hole Dia.
2005A13	1	Black/Pebble Gray (RAL 7032)	PDC Aluminum	80x90x52 (3.15x3.54x2.05)	2xM20	4 x 6mm
2006C13	2	Black/Pebble Gray (RAL 7032)	PDC Aluminum	80x135x52 (3.15x5.32x2.05)	2xM20	4 x 6mm
2007E13	3	Black/Pebble Gray (RAL 7032)	PDC Aluminum	80x180x52 (3.15x7.09x2.05)	2xM20	4 x 6mm
2010G13	4	Black/Pebble Gray (RAL 7032)	PDC Aluminum	80x225x52 (3.15x8.86x2.05)	2xM20	4 x 6mm
2015A13	1	Black/Pebble Gray (RAL 7032)	PDC Aluminum	80 x 90x52 (3.15x3.54x2.05)	2x1/2"-14 NPT	4 x 6mm
2014C13	2	Black/Pebble Gray (RAL 7032)	PDC Aluminum	80x135x52 (3.15x5.32x2.05)	2x1/2"-14 NPT	4 x 6mm
2012E13	3	Black/Pebble Gray (RAL 7032)	PDC Aluminum	80x180x52 (3.15x7.09x2.05)	2x1/2"-14 NPT	4 x 6mm
2008G13	4	Black/Pebble Gray (RAL 7032)	PDC Aluminum	80x225x52 (3.15x8.86x2.05)	2x1/2"-14 NPT	4 x 6mm

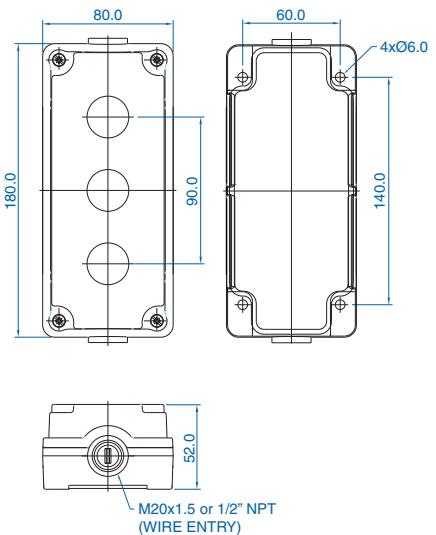
### 1 - Operator Capacity



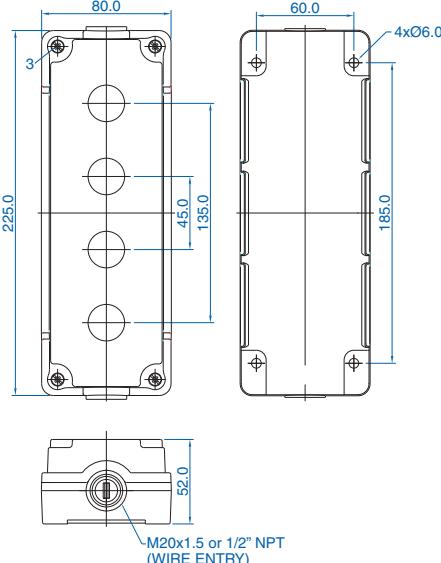
### 2 - Operator Capacity



### 3 - Operator Capacity



### 4 - Operator Capacity



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

## Aluminum Enclosures for 22mm Operators



Certified for  
**NEMA Type 4X**  
12 environment.  
E225660

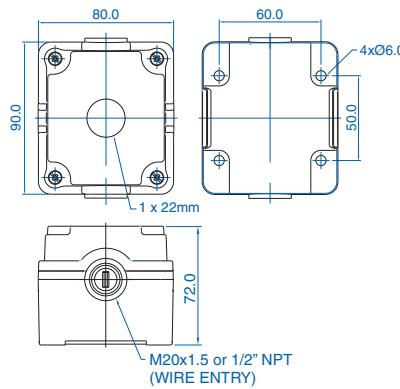
**Aluminum (72mm Height)  
Pressure Die Cast**

For panel mount contact blocks and  
illuminated operators. 2 contact blocks can be used  
with an illuminated operator. 4 contact blocks can  
be used with any non-illuminated operator.

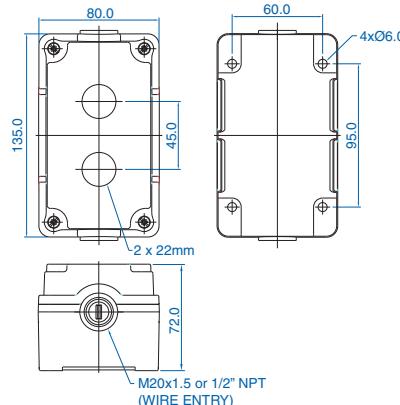


Cat. No.	Operator Capacity	Color Top/ Bottom	Construction	Dimensions WxLxH mm (in.)	Cable Entry Thread Size	Mounting Hole Dia.
7009A13	1	Black/Pebble Gray (RAL 7032)	PDC Aluminum	80x90x72 (3.15x3.54x2.83)	2xM20	4 X 6mm
7006C13	2	Black/Pebble Gray (RAL 7032)	PDC Aluminum	80x135x72 (3.15x5.32x2.83)	2xM20	4 X 6mm
7004E13	3	Black/Pebble Gray (RAL 7032)	PDC Aluminum	80x180x72 (3.15x7.09x2.83)	2xM20	4 X 6mm
7004G13	4	Black/Pebble Gray (RAL 7032)	PDC Aluminum	80x225x72 (3.15x8.86x2.83)	2xM20	4 X 6mm
7010A13	1	Black/Pebble Gray (RAL 7032)	PDC Aluminum	80x90x72 (3.15x3.54x2.83)	2x1/2"-14 NPT	4 X 6mm
7007C13	2	Black/Pebble Gray (RAL 7032)	PDC Aluminum	80x135x72 (3.15x5.32x2.83)	2x1/2"-14 NPT	4 X 6mm
7005E13	3	Black/Pebble Gray (RAL 7032)	PDC Aluminum	80x180x72 (3.15x7.09x2.83)	2x1/2"-14 NPT	4 X 6mm
7005G13	4	Black/Pebble Gray (RAL 7032)	PDC Aluminum	80x225x72 (3.15x8.86x2.83)	2x1/2"-14 NPT	4 X 6mm

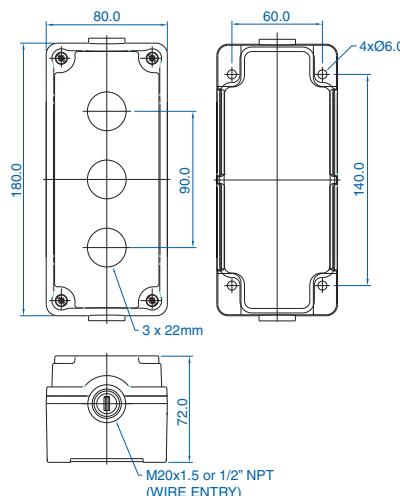
**1 - Operator Capacity**



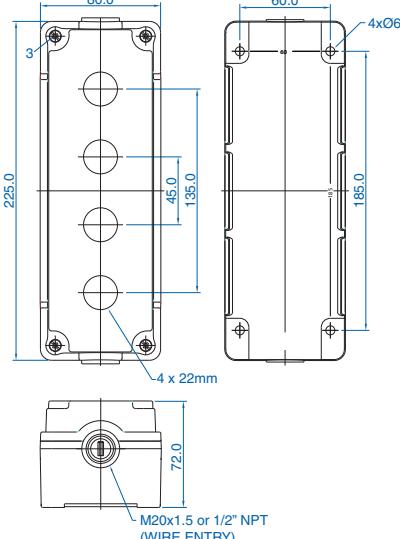
**2 - Operator Capacity**



**3 - Operator Capacity**

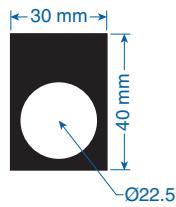


**4 - Operator Capacity**



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

# 22mm Push Button Accessories

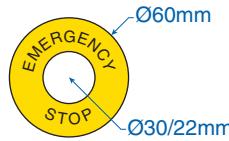


## EMERGENCY STOP

LP41 / 2LP41 (only)

Legend plate Ø 60mm yellow with black text.

*Not to be used with thermoplastic enclosures.*



*Metal legend plates are engraved on both sides, one side in horizontal and the other side in a vertical orientation.*

**Please visit [altechcorp.com/pb](http://altechcorp.com/pb) for other available legend plates.**

## English

Title	Cat No.
AUTO	2LP09
AUTO HAND	2LP32
AUTO - MAN	2LP43
B PHASE	2LP27
Blank Aluminum	2LP40
BOTTOM HEAT	2LP101
CLEAR	2LP51
CLOSE	2LP08
CLUTCH ON/OFF	2LP73
Cycle Stop	2LP55
DOWN	2LP06
EMERGENCY STOP	2LP41
Emergency Stop (black)	2LP56
Emergency Stop (red)	2LP66
FAST	2LP12
FAULT	2LP107
FILM FEED	2LP105
FOR-OFF-REV	2LP42
FORWARD	2LP03
FWD - REV	2LP47
HAND	2LP10
HAND O AUTO	2LP36
HOLD	2LP50
I II	2LP34
I O II	2LP39
INCH	2LP14
INFEED	2LP72
INFEED ON/OFF	2LP71
JOG	2LP69
JOG - RUN	2LP45
KNIFE CYCLE	2LP106
LEFT	2LP18
LOCAL	2LP21
LOCAL REMOTE	2LP33
MAN O AUTO	2LP36
O I	2LP35
OFF	2LP16

Title	Cat No.
OFF - ON	2LP46
ON	2LP15
ON OFF	2LP30
OPEN	2LP07
OVER	2LP74
OXY - ATM - AUTO	2LP58
OXY - AUTO - ATM	2LP57
POSITION , A B	2LP48
POWER ON	2LP20
PUSHER CYCLE	2LP104
R PHASE	2LP25
RAISE - LOWER	2LP44
READY	2LP49
REMOTE	2LP22
RESET	2LP13
RESET/MANUAL/AUTO	2LP103
REV FWD	2LP31
REV - OFF - FWD	2LP59
REVERSE	2LP04
RIGHT	2LP17
RUN	2LP24
SHEAR	2LP70
SIDE HEAT	2LP102
SLOW	2LP11
SLOW OFF FAST	2LP37
START	2LP01
START STOP	2LP28
STOP (red)	2LP02
TEST	2LP23
TRIP	2LP19
UNDERLOAD	2LP108
UP	2LP05
UP DOWN	2LP29
UP OFF DOWN	2LP38
Y PHASE	2LP26
Temporary for Custom Imprint	2LPXX

## Spanish

Title	Cat No.
ABAJO	2LP06SP
ABRIR	2LP07SP
ADELANTE	2LP03SP
ADELANTE ATRAS	2LP31SP
ARRANQUE	2LP01SP
ARRANQUE PARO	2LP28SP
ARRIBA	2LP05SP
ARRIBA ABAJO	2LP29SP
ARRIBA FUERA ABAJO	2LP38SP
ATRAS	2LP04SP
AUTO MAN	2LP32SP
CERRAR	2LP08SP
DENTRO	2LP15SP
DERECHO	2LP17SP

Title	Cat No.
ENCENDIDO	2LP20SP
ENCENDIDO APAGADO	2LP30SP
FALLA	2LP19SP
FUERA	2LP16SP
IZQUIERDA	2LP18SP
LENTO	2LP14SP
LENTO FUERA RAPIDO	2LP37SP
LOCAL REMOTO	2LP33SP
MAN O AUTO	2LP36SP
MANUAL	2LP10SP
PARO	2LP02SP
PARO DE EMERGENCIA	2LP41SP
RAPIDO	2LP12SP
REARME	2LP13SP

# 22mm Push Button Accessories



**Altech**

## Replacement Lens for Illuminated Mushroom Operators

Color	Cat No.
White	2ALM1L
Green	2ALM3L
Red	2ALM4L
Amber	2ALM5L
Blue	2ALM6L
Clear	2ALM7L
Yellow	2ALM8L

## Lenses for Pilot Lights with LED

Color	Cat No.
White	2PLL1L
Green	2PLL3L
Red	2PLL4L
Amber	2PLL5L
Blue	2PLL6L
Clear	2PLL7L
Yellow	2PLL8L

## Lenses for Illuminated Actuators with LED (flush/projecting)

Color	Cat No.
White	2LAL1L
Green	2LAL3L
Red	2LAL4L
Amber	2LAL5L
Blue	2LAL6L
Clear	2LAL7L
Yellow	2LAL8L

## Boots for Booted Actuators

Color	Cat No.
White	2BT1
Black	2BT2
Green	2BT3
Red	2BT4
Blue	2BT6
Clear	2BT7
Yellow	2BT8

## Lenses for Pilot Lights with Filament Bulb

Color	Cat No.
White	2PLL1
Green	2PLL3
Red	2PLL4
Amber	2PLL5
Blue	2PLL6
Clear	2PLL7
Yellow	2PLL8

## Lenses for Illuminated Actuators with Filament Bulb

Color	Cat No.
White	2LAL1
Green	2LAL3
Red	2LAL4
Amber	2LAL5
Blue	2LAL6
Clear	2LAL7
Yellow	2LAL8

## Replacement Bulbs



### Filament Bulbs

Color	Voltage	Cat No.
Clear	12V AC/DC	BA9S12
Clear	24V AC/DC	BA9S24
Clear	48V AC/DC	BA9S48
Clear	110V AC/DC	BA9S110
Clear	230V AC/DC	BA9S220

### LED Bulbs

Color	Voltage	Cat No.
<b>12V AC/DC</b>		
White	12V AC/DC	MCB9112
Green	12V AC/DC	MCB9312
Red	12V AC/DC	MCB9412
Amber	12V AC/DC	MCB9512
Blue	12V AC/DC	MCB9612
Yellow	12V AC/DC	MCB9812

### 24V AC/DC

White	24V AC/DC	MCB9124
Green	24V AC/DC	MCB9324
Red	24V AC/DC	MCB9424
Amber	24V AC/DC	MCB9524
Blue	24V AC/DC	MCB9624
Yellow	24V AC/DC	MCB9824

### 48V AC/DC

White	48V AC/DC	MCB9148
Green	48V AC/DC	MCB9348
Red	48V AC/DC	MCB9448
Amber	48V AC/DC	MCB9548
Blue	48V AC/DC	MCB9648
Yellow	48V AC/DC	MCB9848

## Maximum Power Consumption:

LED		FILAMENT BULBS	
Supply Voltage	Power (max) in Watts	Current	Power (max) in Watts
12V	0.5W	max 20mA	2W
24V	0.5W	max 20mA	2W
48V	0.5W	max 20mA	2W
110V	0.5W	max 15mA	2.6W
240V	1W	max 10mA	2.6W

These bulbs are available in various colors and Voltages. A filament bulb can be directly replaced with these LED based bulbs without having to change any other expensive part of your existing lamps.

These bulbs use high brightness LED chips which last for more than 100,000 hours and consume very little power. Heat generated by LED based bulbs is negligible hence no damage to the body of the lamp or any operator in case of Illuminated push buttons.

These bulbs can be used to replace 12V AC/DC, 24V AC/DC, 48V AC/DC, 110V AC or DC and 240V AC or DC circuits directly. LED color indication is given on the bulb for easy identification.

Conforming Standards: UL508, CSA 22.2, IEC 60947-5-1

## 22mm Push Button Accessories



**Push Push mechanism for converting spring return actuator into maintained**  
Cat. No. 2PPM



**Transparent Silicone Rubber Boot for Flush Actuators**  
Color: Clear  
Cat. No. 2BT7 (for non-illuminated)  
2ALBT7 (for illuminated)



**Adapter for installing a Ø22.5 device in Ø 30.5 cutout**  
Cat. No. 2ADP (with washer)  
ADW (washer only)



**Rubber Boot for Twin Actuators**  
Color: Clear  
Cat. No. 2ATBT7 (Non-Illuminated)  
2ATLBT7 (illuminated)



**Mounting Bracket**  
Cat. No. 2BRK  
Cat. No. 2BRKT (Thin Bracket for Base Mount Enclosures)



**Blanking plug for 22.5 mm holes**  
Color: Black  
Cat. No. 2BP2



**Blanking plug for M20 (20mm) or NPT 1/2" holes**  
Color: Gray  
Cat. No. M20  
Cat. No. NPT1/2



**Padlock**  
For mushroom actuator: Cat. No. 2PAM  
For projecting actuator: Cat. No. 2PAP

**Bulb Extractor**  
Cat. No. 2BA9SE



**E-Stop Shroud**  
Plastic protector: Cat. No. 2ESS1  
Plastic protector (UL): Cat. No. 2ESS1-UL



**Bulb Holder for Illuminated Push Buttons**  
Cat. No. 2LHB



**Plastic Cover**  
Cat. No. 2PAM7



**Rubber Gasket**  
Cat. No. 2PRG1



**Replacement Keys**  
For all 22mm operators wth keys  
Cat. No. 2KY455



**Rubber Boot for Contact Elements**  
Cat. No. 2SEBT2

## 22mm Push Button Switch Contacts

### Panel Mount Types



**S1**  
Normally  
Open  
Silver



**S2**  
Normally  
Closed  
Silver



**S3**  
Normally  
Open  
Gold plated



**S4**  
Normally  
Closed  
Gold plated

#### Mounting Examples:



Cast Aluminum Enclosure  
with panel mount contacts  
and metal operator



Plastic Enclosure  
with panel mount contacts  
and plastic operator

### Base Mount Types



**S5\***  
Normally  
Open  
Silver



**S6\***  
Normally  
Closed  
Silver



**S7\***  
Normally  
Open  
Gold plated



**S8\***  
Normally  
Closed  
Gold plated

#### Mounting Examples:



Cast Aluminum Enclosure  
with base mount contacts  
and metal operator



Plastic Enclosure  
with base mount contacts  
and metal operator



Plastic Enclosure  
with base mount contacts  
and plastic operator

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

## Pre-assembled or Ready to Assemble Control Stations



### Solutions for your applications

Backed by technical and industrial experience, we offer preassembled ready to install or assembled to order control stations. Altech offers several ranges of control stations. From a cost effective plastic enclosure assembled with 22 mm push buttons to a heavy duty cast aluminum enclosure assembled with 22 or 30mm push buttons, you will find the one that fits your application.



Sample Part No. 44.2R.-156



### High performance and Extensive range

**Our basic plastic or Pressure Die Cast aluminum (PDC) enclosures** are available with contact blocks mounted on the bracket behind the 22 mm operator or in the rear (base) of the enclosure (see page 41). Altech can assemble the control station to the customer specifications or it can be ordered unassembled. These enclosures are easy to assemble by using any Non-Illuminated operator with a maximum of 2 contacts per operator.

**Our plastic** enclosures on pages 34-35 can be customized to meet the customer's most demanding applications. These enclosures can be equipped with any 22 mm illuminated or Non-Illuminated operators. Use up to 2 contact blocks with the illuminated operators or up to 4 contact blocks with the Non-illuminated operators.

**Our Gravity Die Cast aluminum (GDC) enclosures** have an excellent resistance to mechanical shock and vibration. They can be equipped with any illuminated or Non-Illuminated operators. Use up to 2 contact blocks with the illuminated 22mm operators or up to 4 contact blocks with the Non-illuminated 22mm operators. This enclosure can be modified to accept any Non-illuminated 30mm operator or pilot light as well.



## Pre-assembled or Ready to Assemble Control Stations



### Application specific solutions

These products are suitable for a wide variety of applications. They have an excellent resistance to corrosion and cleaning agents. They are tolerant of high pressure cleaning without leakage. These enclosures combined with our push buttons offer an excellent price/performance ratio.

Our staff has the ability to take your requirements and rapidly turn them into a solution. We use the latest CAD system in our process. Prototypes are available for most application specific requirements.



Sample Part No. 44-200T



### Safety and reliability

The majority of the enclosures meet all industrial application requirements from the most common to the most extreme.

They have international certifications such as UL, CE, etc. They conform to IEC standards, have a IP65 rating and NEMA Type 4X protection.

*Metal legend plates are engraved on both sides, one side in horizontal and the other side in a vertical orientation.*

### Save Time

Our control stations save you time, simplify and speed up your installation while maintaining the high quality and appearance of your equipment.

Mounting is easy, the only tool you need is a screwdriver.



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