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.

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.

Table of Contents

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

3

Altech Corp.®
35 Royal Road, Flemington, NJ 08822-6000
908-806-9400 • www.altechcorp.com

22.5mm Ø

OFF   ON

Part No. PBD

TEKNIC

Quality at a Competitive Price!

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
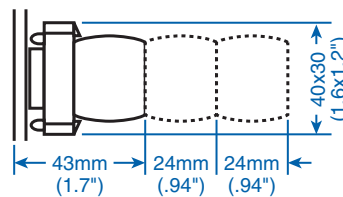
LED Illuminated Actuators and Pilot Lights

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.
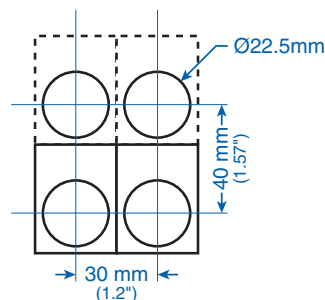
Terminals

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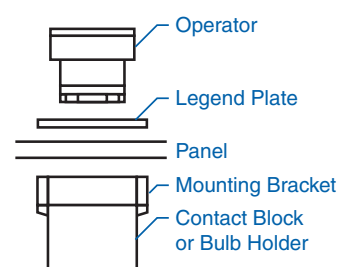
Mounting

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

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

5

22mm Non-Illuminated Metal Operators

Flush
Momentary
with mounting bracket

	Color	Cat No.
☐	White	2AF1
■	Black	2AF2
■	Green	2AF3
■	Red	2AF4
■	Blue	2AF6
■	Yellow	2AF8

Booted
Momentary
with mounting bracket
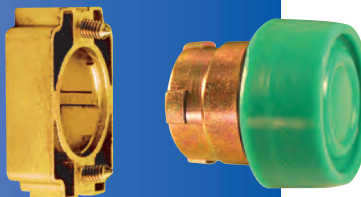
	Color	Cat No.
☐	White	2AB1
■	Black	2AB2
■	Green	2AB3
■	Red	2AB4
■	Blue	2AB6
■	Yellow	2AB8

Projecting
Momentary
with mounting bracket

|	Color	Cat No.
☐	White	2AP1
■	Black	2AP2
■	Green	2AP3
■	Red	2AP4
■	Blue	2AP6
■	Yellow	2AP8

Recessed
Momentary
with mounting bracket

	Color	Cat No.
☐	White	2AF1RH
■	Black	2AF2RH
■	Green	2AF3RH
■	Red	2AF4RH
■	Blue	2AF6RH
■	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.
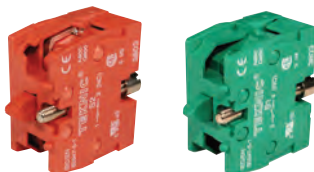
Markings on Request
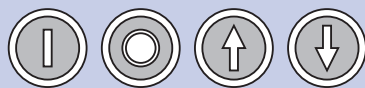
Altech Push Buttons are available in a variety of markings, including molded arrows. Please contact Altech for further information and part numbers.

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	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.

Altech

Dimensional Drawings

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

Non-Illuminated Flush

29 · 43 · 67 · 91 · 29 · 12
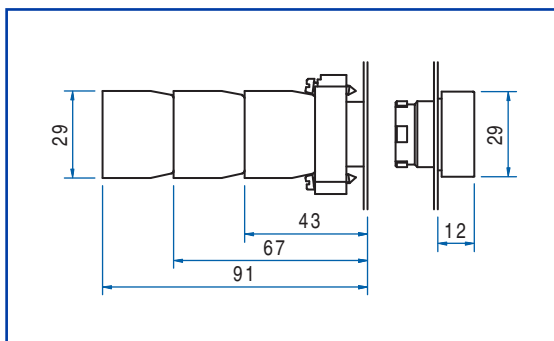
Non-Illuminated Booted

29 · 43 · 67 · 91 · 34 · 15
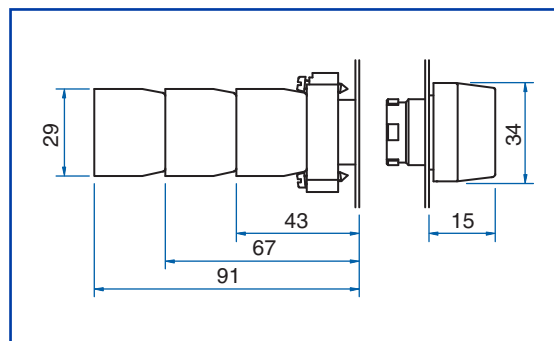
Non-Illuminated Projecting

29 · 43 · 67 · 91 · 29 · 20
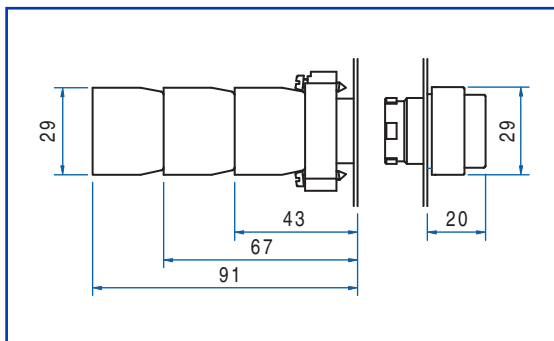
Non-Illuminated Recessed
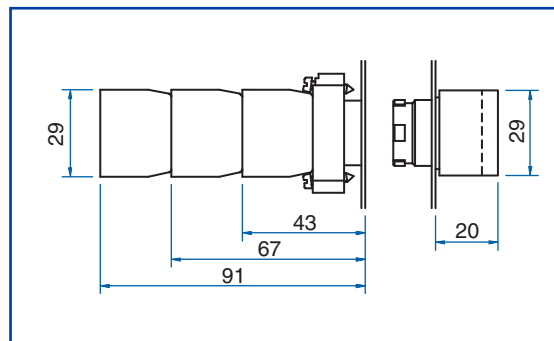
29 · 43 · 67 · 91 · 29 · 20

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.

S2

S1

S2

S1

S2

S1

2PPM

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

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

7

22mm Non-Illuminated Mushroom Metal Operators

CSA C us UL C us
E225660 CE VDE (D V E)

Certified for
NEMA Type 4X
12 environment.

Mushroom
Momentary
with mounting bracket

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

Mushroom
Momentary Large
with mounting bracket
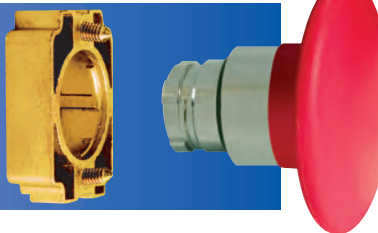
	Color	Description	Cat No.
☐	White	60mm, Head	2AMJ1
■	Black	60mm, Head	2AMJ2
■	Green	60mm, Head	2AMJ3
■	Red	60mm, Head	2AMJ4
■	Blue	60mm, Head	2AMJ6
☐	Yellow	60mm, Head	2AMJ8

Mushroom
Push-Pull
with mounting bracket
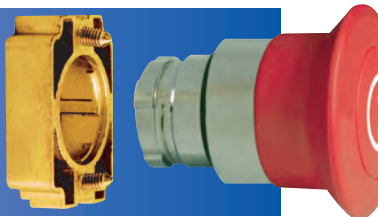
	Color	Description	Cat No.
☐	White	40mm, Head	2AMPP1
■	Black	40mm, Head	2AMPP2
■	Green	40mm, Head	2AMPP3
■	Red	40mm, Head	2AMPP4
■	Blue	40mm, Head	2AMPP6
☐	Yellow	40mm, Head	2AMPP8

Mushroom
Push-Pull Large
with mounting bracket
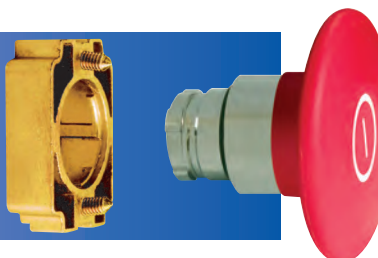
	Color	Description	Cat No.
☐	White	60mm, Head	2AMPPJ1
■	Black	60mm, Head	2AMPPJ2
■	Green	60mm, Head	2AMPPJ3
■	Red	60mm, Head	2AMPPJ4
■	Blue	60mm, Head	2AMPPJ6
☐	Yellow	60mm, Head	2AMPPJ8

Markings on Request

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	**S1**
Normally Closed Silver	**S2**
Normally Open Gold Plated	**S3**
Normally Closed Gold Plated	**S4**

Base Mount*

Normally Open Silver	**S5**
Normally Closed Silver	**S6**
Normally Open Gold Plated	**S7**
Normally Closed Gold Plated	**S8**

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

Dimensional Drawings

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

Mushroom Momentary
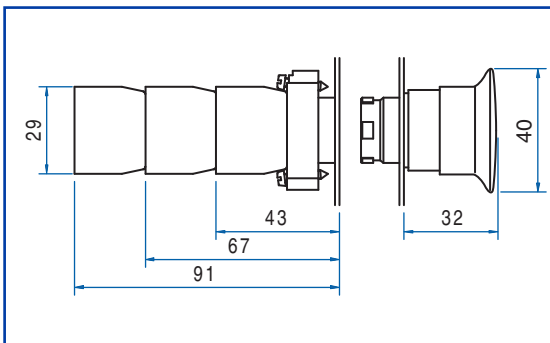
29   43   67   91   32   40

Mushroom Momentary Large

29   43   67   91   32   60

Mushroom Push-Pull

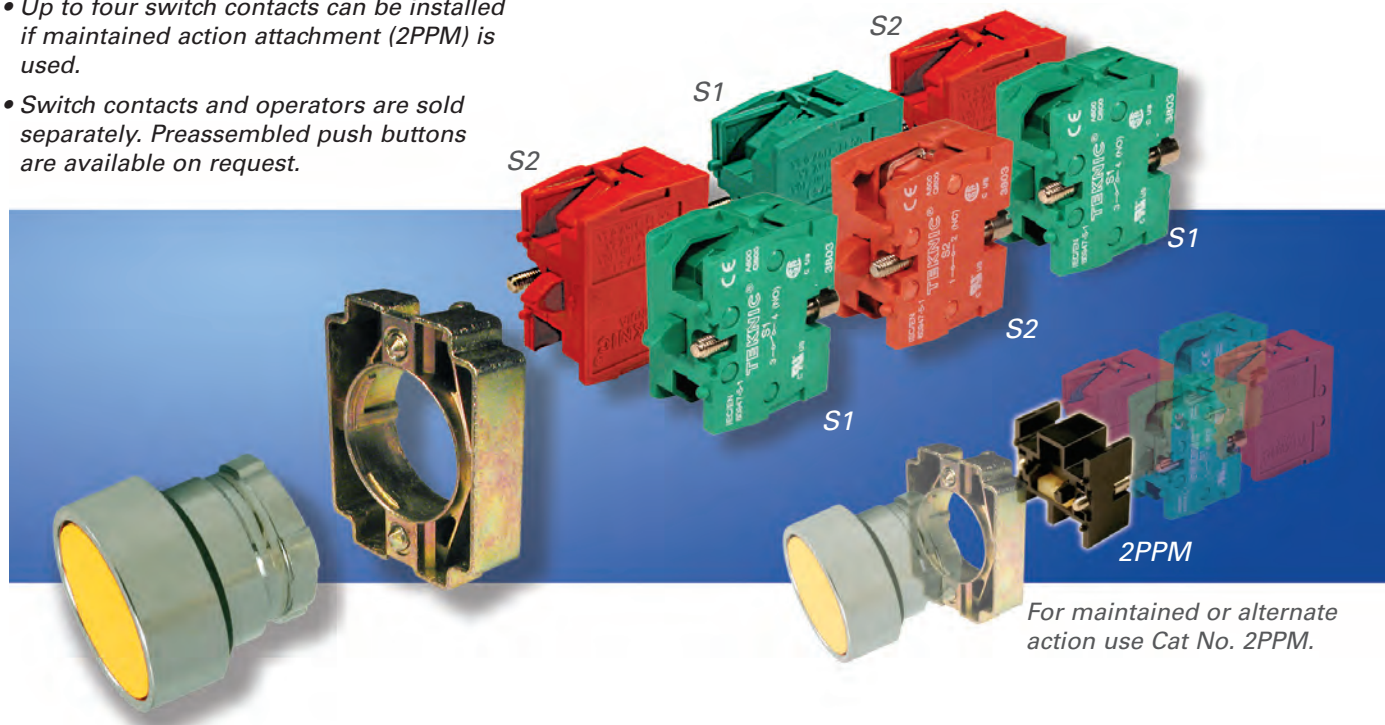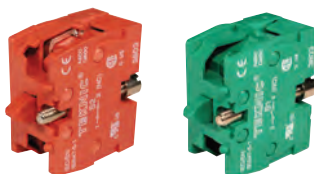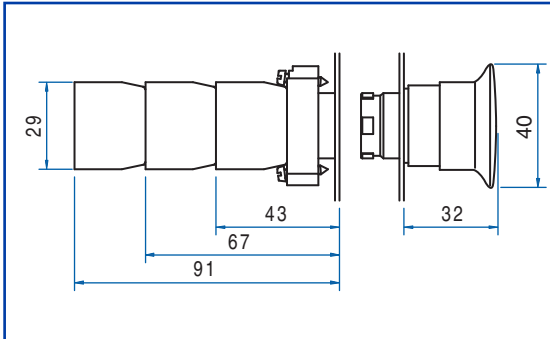29   43   67   91   32   40

Mushroom Push-Pull Large

29   43   67   91   32   60

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.*

S2   S1   S2   S1   S2   S1

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

9

22mm Non-Illuminated Mushroom Metal Operators

CSA c us   UL c us   E225660   CE   DVE
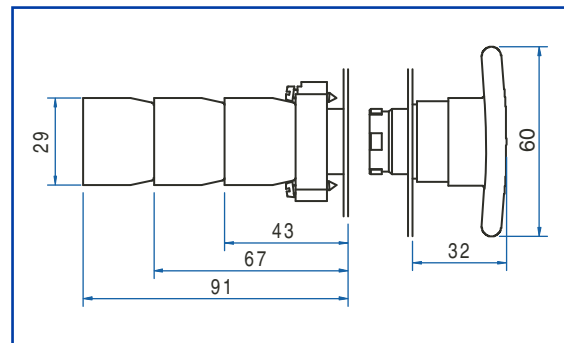
Certified for
NEMA Type 4X
12 environment.

Mushroom
Push-Turn Small
with mounting bracket

	Color	Description	Cat No.
☐	White	30 mm, Head	2AMLS1
■	Black	30 mm, Head	2AMLS2
■	Green	30 mm, Head	2AMLS3
■	Red	30 mm, Head	2AMLS4
■	Blue	30 mm, Head	2AMLS6
■	Yellow	30 mm, Head	2AMLS8

Mushroom
Push-Turn
with mounting bracket

	Color	Description	Cat No.
☐	White	40mm, Head	2AML1
■	Black	40mm, Head	2AML2
■	Green	40mm, Head	2AML3
■	Red	40mm, Head	2AML4
■	Blue	40mm, Head	2AML6
■	Yellow	40mm, Head	2AML8

Mushroom
Push-Turn Large
with mounting bracket

	Color	Description	Cat No.
☐	White	60mm, Head	2AMLJ1
■	Black	60mm, Head	2AMLJ2
■	Green	60mm, Head	2AMLJ3
■	Red	60mm, Head	2AMLJ4
■	Blue	60mm, Head	2AMLJ6
■	Yellow	60mm, Head	2AMLJ8

Mushroom
with Key Release
with mounting bracket

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

	Color	Description	Cat No.
☐	White	40mm, Head	2AMLKB1
■	Black	40mm, Head	2AMLKB2
■	Green	40mm, Head	2AMLKB3
■	Red	40mm, Head	2AMLKB4
■	Blue	40mm, Head	2AMLKB6
■	Yellow	40mm, Head	2AMLKB8

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	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

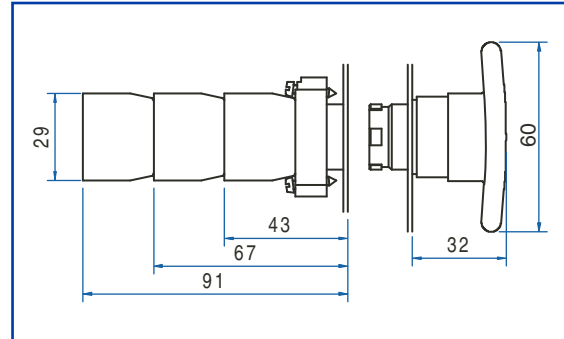** For use with non-illuminated operators in thermoplastic or aluminum enclosures listed on pages 30 and 36-37.*

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

Dimensional Drawings

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

Mushroom Push-Turn Small

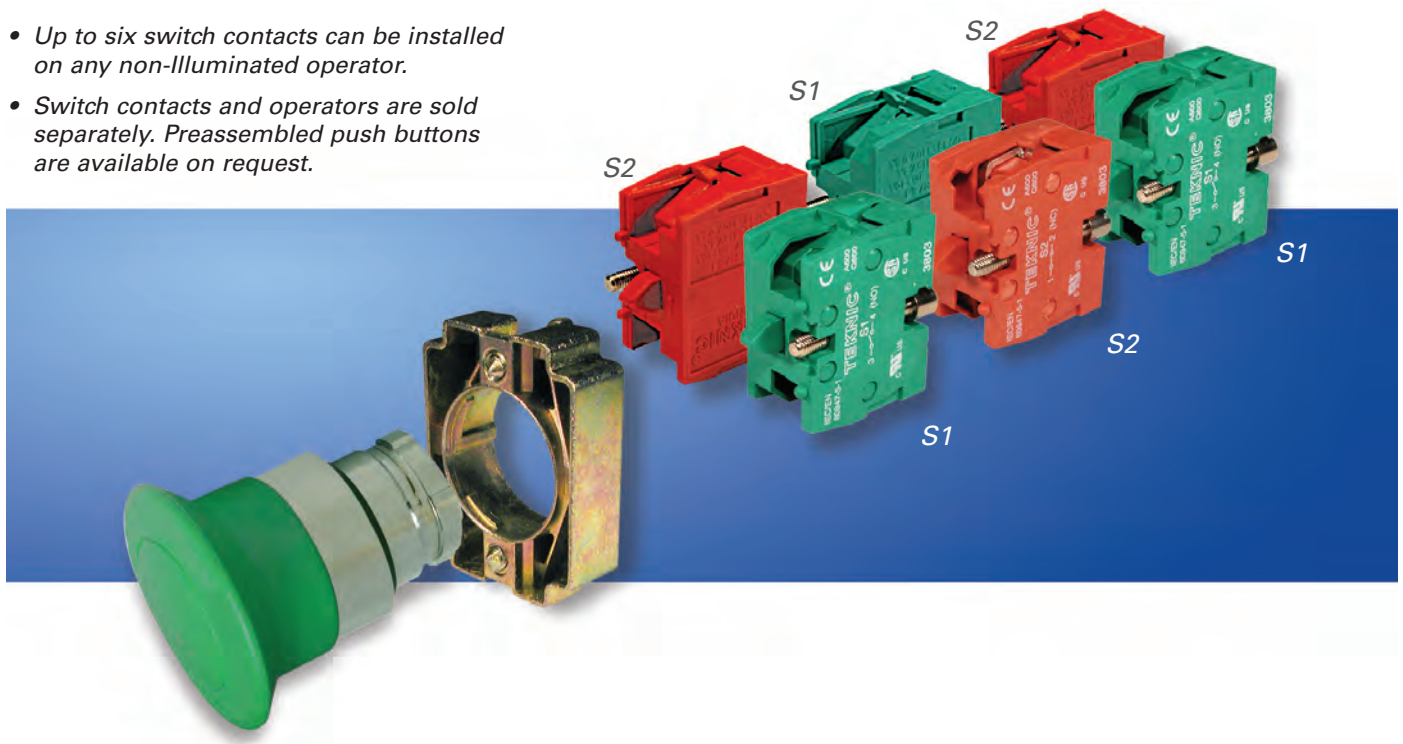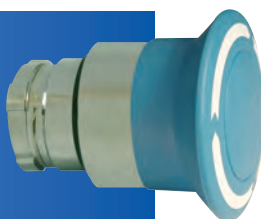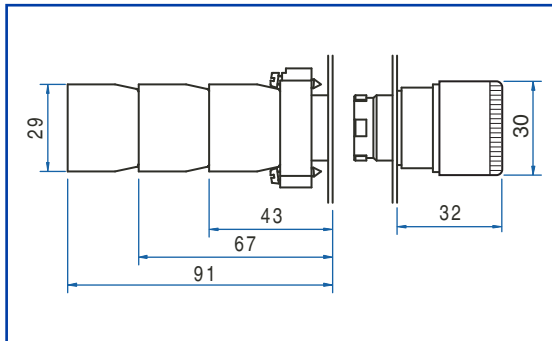
Mushroom Push-Turn
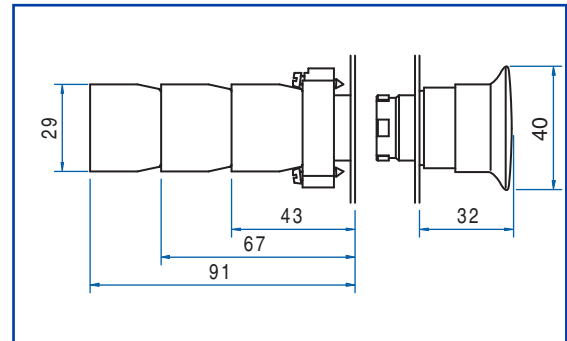
Mushroom Push-Turn Large
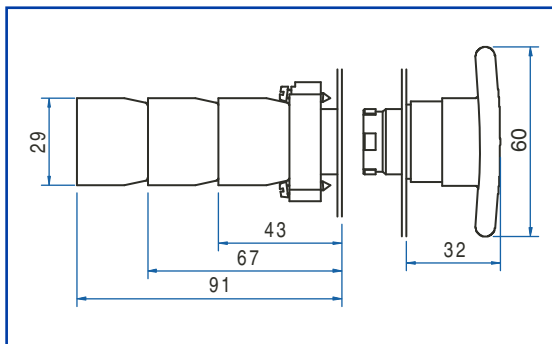
Mushroom with Key Release
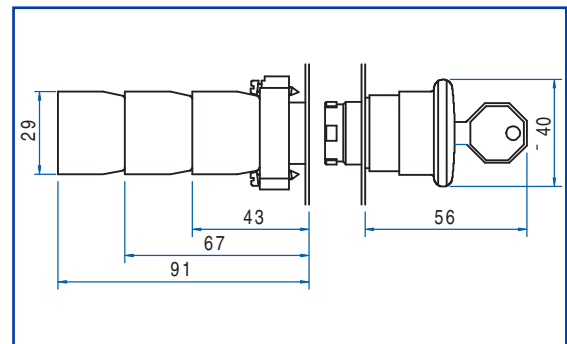
Exploded Assembly View

- 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.

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

11

22mm LED Illuminated Mushroom Metal Operators

Mushroom
Illuminated
Momentary
with LED bulb, bulb holder and mounting bracket
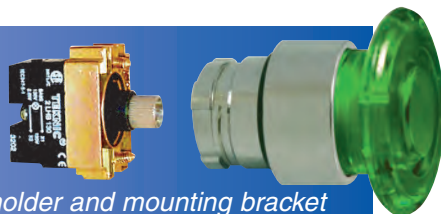
Dimensional Drawings
All dimensions shown in millimeters.
To convert to inches multiply by 0.03937

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	**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.
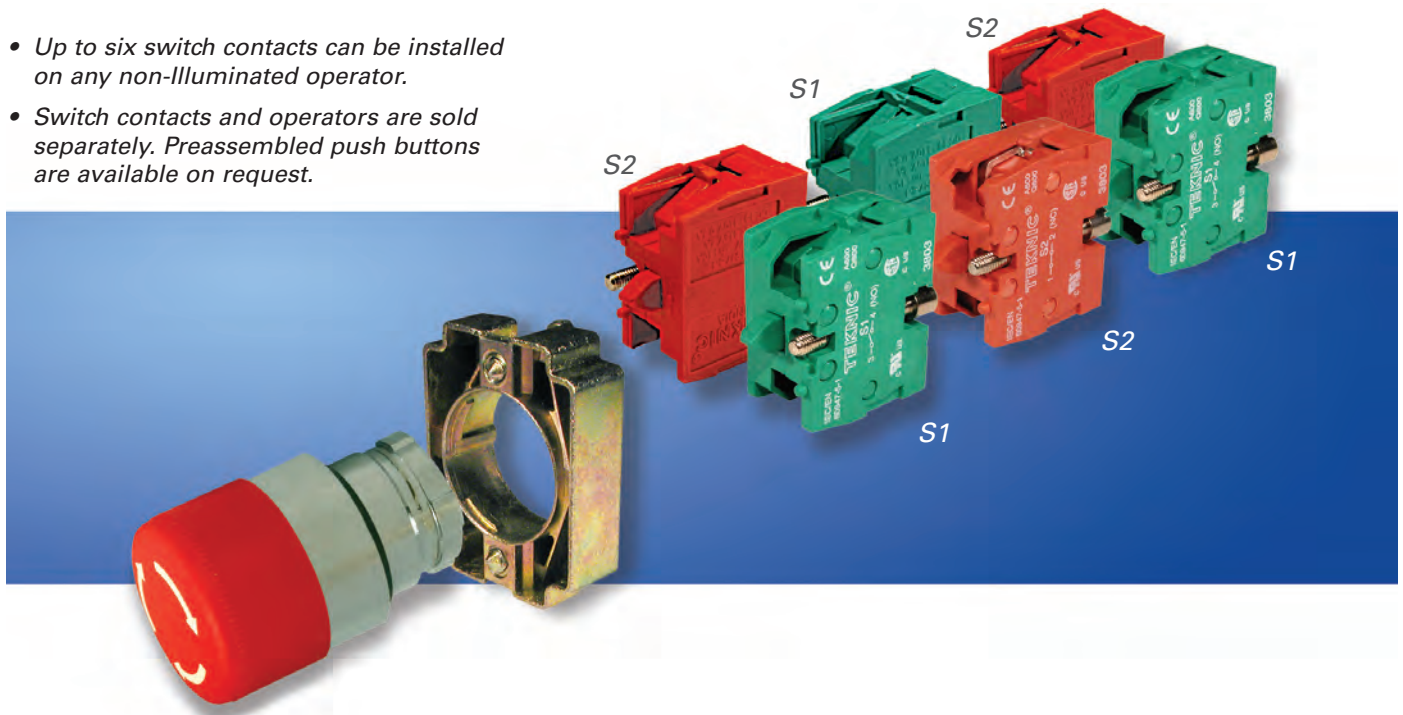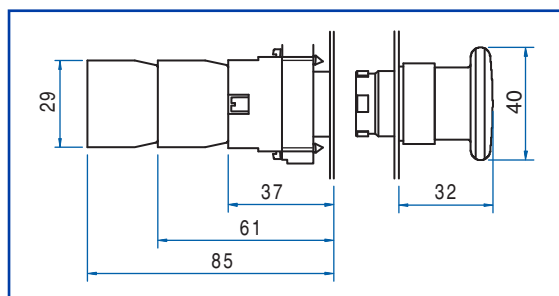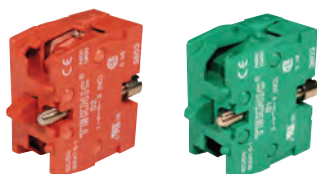
Color	Description	Cat No.
12V AC/DC		
☐ White	40mm Head, 12VAC/DC	2ALM1LB-012
🟩 Green	40mm Head, 12VAC/DC	2ALM3LB-012
🟥 Red	40mm Head, 12VAC/DC	2ALM4LB-012
🟧 Amber	40mm Head, 12VAC/DC	2ALM5LB-012
🟦 Blue	40mm Head, 12VAC/DC	2ALM6LB-012
☐ Clear	40mm Head, 12VAC/DC	2ALM7LB-012
🟨 Yellow	40mm Head, 12VAC/DC	2ALM8LB-012
24V AC/DC		
☐ White	40mm Head, 24VAC/DC	2ALM1LB-024
🟩 Green	40mm Head, 24VAC/DC	2ALM3LB-024
🟥 Red	40mm Head, 24VAC/DC	2ALM4LB-024
🟧 Amber	40mm Head, 24VAC/DC	2ALM5LB-024
🟦 Blue	40mm Head, 24VAC/DC	2ALM6LB-024
☐ Clear	40mm Head, 24VAC/DC	2ALM7LB-024
🟨 Yellow	40mm Head, 24VAC/DC	2ALM8LB-024
48V AC/DC		
☐ White	40mm Head, 48VAC/DC	2ALM1LB-048
🟩 Green	40mm Head, 48VAC/DC	2ALM3LB-048
🟥 Red	40mm Head, 48VAC/DC	2ALM4LB-048
🟧 Amber	40mm Head, 48VAC/DC	2ALM5LB-048
🟦 Blue	40mm Head, 48VAC/DC	2ALM6LB-048
☐ Clear	40mm Head, 48VAC/DC	2ALM7LB-048
🟨 Yellow	40mm Head, 48VAC/DC	2ALM8LB-048
110V AC*		
☐ White	40mm Head, 110VAC*	2ALM1LB-110
🟩 Green	40mm Head, 110VAC*	2ALM3LB-110
🟥 Red	40mm Head, 110VAC*	2ALM4LB-110
🟧 Amber	40mm Head, 110VAC*	2ALM5LB-110
🟦 Blue	40mm Head, 110VAC*	2ALM6LB-110
☐ Clear	40mm Head, 110VAC*	2ALM7LB-110
🟨 Yellow	40mm Head, 110VAC*	2ALM8LB-110
230V AC*		
☐ White	40mm Head, 230VAC*	2ALM1LB-230
🟩 Green	40mm Head, 230VAC*	2ALM3LB-230
🟥 Red	40mm Head, 230VAC*	2ALM4LB-230
🟧 Amber	40mm Head, 230VAC*	2ALM5LB-230
🟦 Blue	40mm Head, 230VAC*	2ALM6LB-230
☐ Clear	40mm Head, 230VAC*	2ALM7LB-230
🟨 Yellow	40mm Head, 230VAC*	2ALM8LB-230

*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.*

CSA c US UL c US CE VDE
E225660
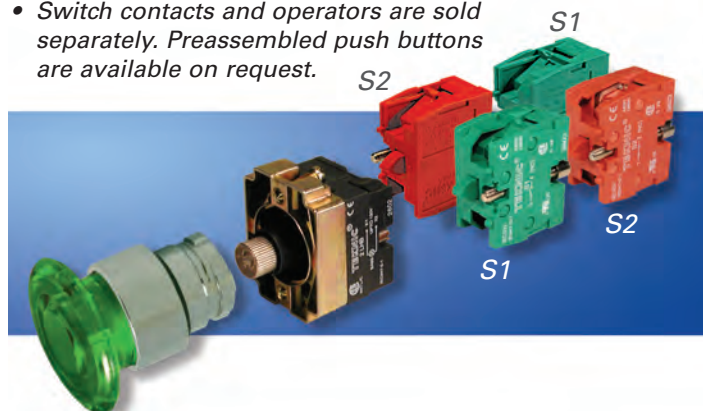
Certified for
NEMA Type 4X
12 environment.

Mushroom
Illuminated
Push-Pull
with LED bulb, bulb holder and mounting bracket
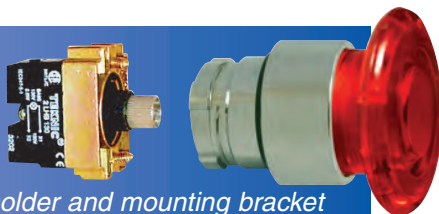
Dimensional Drawings
All dimensions shown in millimeters.
To convert to inches multiply by 0.03937

Illuminated Mushroom Push-Pull

29   40
37   32
61
85

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.

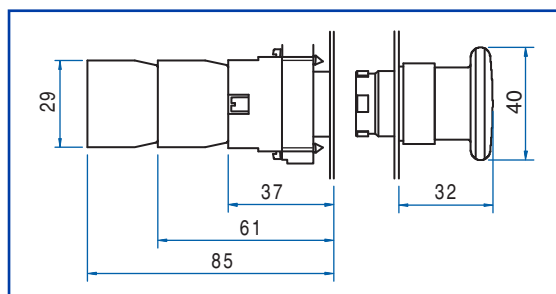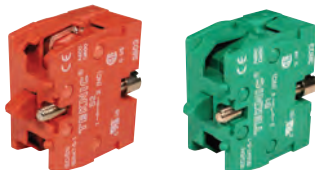| Color	Description	Cat No.
12V AC/DC		
White	40mm Head, 12VAC/DC	2ALMPP1LB-012
Green	40mm Head, 12VAC/DC	2ALMPP3LB-012
Red	40mm Head, 12VAC/DC	2ALMPP4LB-012
Amber	40mm Head, 12VAC/DC	2ALMPP5LB-012
Blue	40mm Head, 12VAC/DC	2ALMPP6LB-012
Clear	40mm Head, 12VAC/DC	2ALMPP7LB-012
Yellow	40mm Head, 12VAC/DC	2ALMPP8LB-012
24V AC/DC		
White	40mm Head, 24VAC/DC	2ALMPP1LB-024
Green	40mm Head, 24VAC/DC	2ALMPP3LB-024
Red	40mm Head, 24VAC/DC	2ALMPP4LB-024
Amber	40mm Head, 24VAC/DC	2ALMPP5LB-024
Blue	40mm Head, 24VAC/DC	2ALMPP6LB-024
Clear	40mm Head, 24VAC/DC	2ALMPP7LB-024
Yellow	40mm Head, 24VAC/DC	2ALMPP8LB-024
48V AC/DC		
White	40mm Head, 48VAC/DC	2ALMPP1LB-048
Green	40mm Head, 48VAC/DC	2ALMPP3LB-048
Red	40mm Head, 48VAC/DC	2ALMPP4LB-048
Amber	40mm Head, 48VAC/DC	2ALMPP5LB-048
Blue	40mm Head, 48VAC/DC	2ALMPP6LB-048
Clear	40mm Head, 48VAC/DC	2ALMPP7LB-048
Yellow	40mm Head, 48VAC/DC	2ALMPP8LB-048
110V AC*		
White	40mm Head, 110VAC*	2ALMPP1LB-110
Green	40mm Head, 110VAC*	2ALMPP3LB-110
Red	40mm Head, 110VAC*	2ALMPP4LB-110
Amber	40mm Head, 110VAC*	2ALMPP5LB-110
Blue	40mm Head, 110VAC*	2ALMPP6LB-110
Clear	40mm Head, 110VAC*	2ALMPP7LB-110
Yellow	40mm Head, 110VAC*	2ALMPP8LB-110
230V AC*		
White	40mm Head, 230VAC*	2ALMPP1LB-230
Green	40mm Head, 230VAC*	2ALMPP3LB-230
Red	40mm Head, 230VAC*	2ALMPP4LB-230
Amber	40mm Head, 230VAC*	2ALMPP5LB-230
Blue	40mm Head, 230VAC*	2ALMPP6LB-230
Clear	40mm Head, 230VAC*	2ALMPP7LB-230
Yellow	40mm Head, 230VAC*	2ALMPP8LB-230

*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.*

S1
S2
S2
S1

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

13
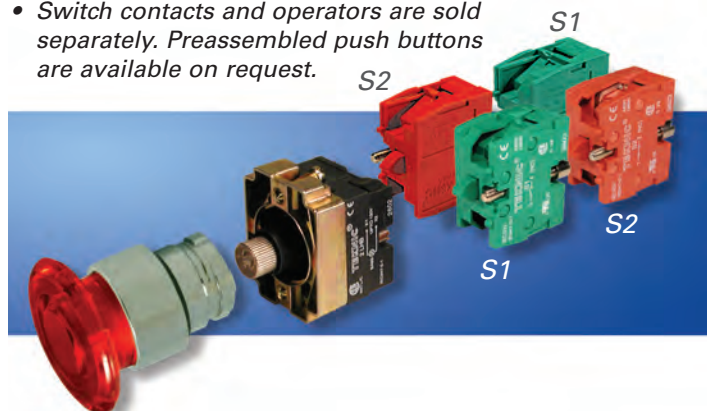
22mm Twin Touch Metal Non-Illuminated Operators

Certified for NEMA Type 4X 12 environment.

E225660

Twin Touch/
Not Marked
with mounting bracket
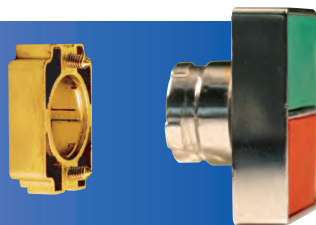
Arrows marking available upon request.

	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

Twin Touch
I-O Marked
with mounting bracket

Arrows marking available upon request.

	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.

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.
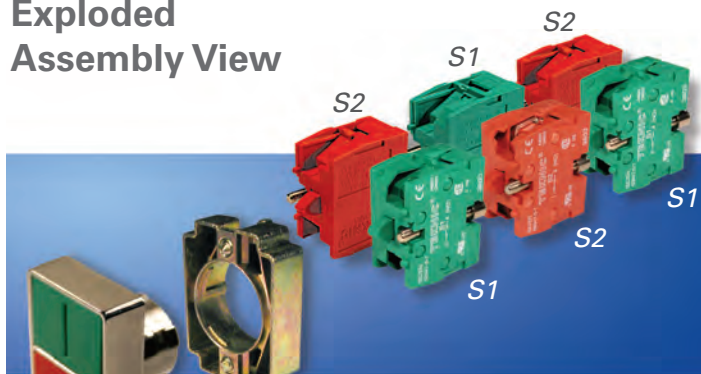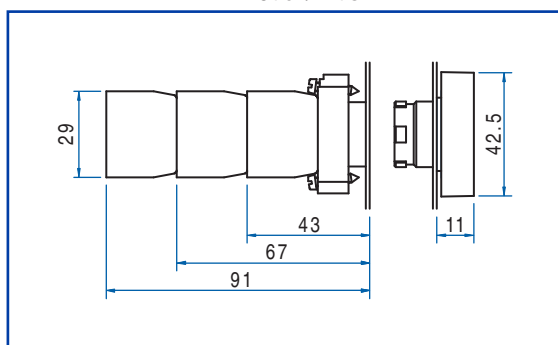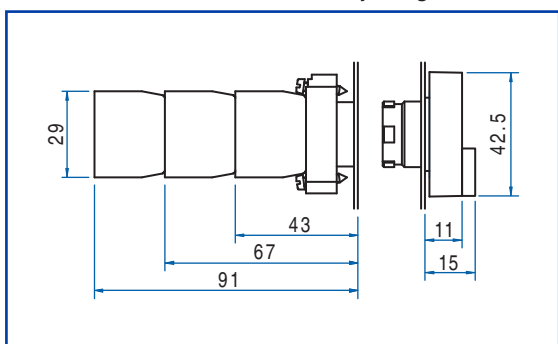
Dimensional Drawings

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

Twin Touch/ Flush

Twin Touch/ Flush/ Projecting

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**	**S5**
Normally Closed Silver	**S2**	**S6**
Normally Open Gold plated	**S3**	**S7**
Normally Closed Gold plated	**S4**	**S8**

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.

E225660

Illuminated Center
Twin Touch/
Not Marked
with LED bulb, bulb holder and mounting bracket

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

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

Illuminated Center
Twin Touch/
I-O Marked
with LED bulb, bulb holder and mounting bracket

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

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.

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

Illuminated Twin Touch/ Flush

29 37 61 85 55 11

Illuminated Twin Touch/ Flush/ Projecting
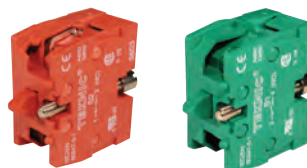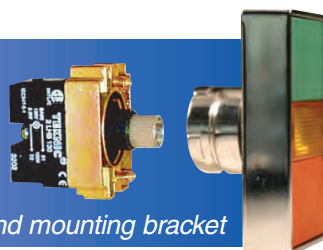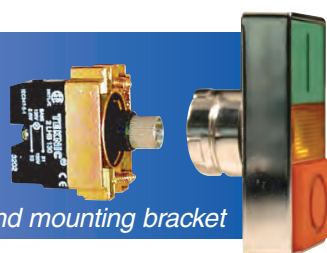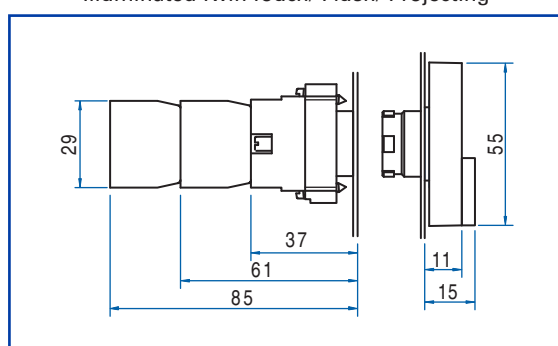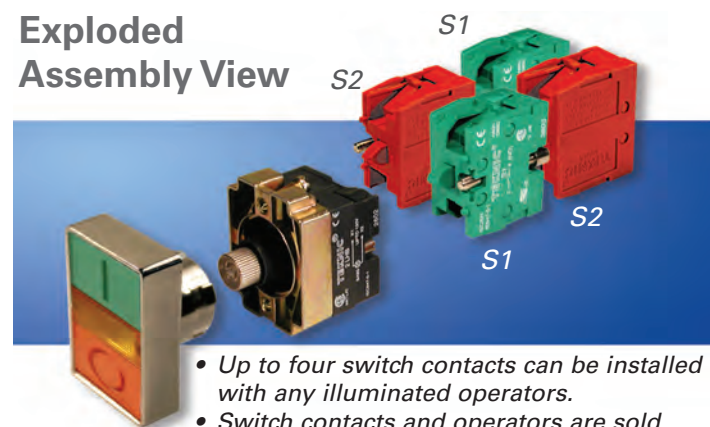
29 37 61 85 55 11 15

Exploded Assembly View

S1
S2
S2
S1

- 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 Cat No.	Base Mount* Cat No.
Normally Open Silver	S1	S5
Normally Closed Silver	S2	S6
Normally Open Gold plated	S3	S7
Normally Closed Gold plated	S4	S8

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

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

15

22mm Non-Illuminated Metal Selector Switch Operators

Certified for
NEMA Type 4X
12 environment.

C SA US   C UL US   CE   V D E

E225660

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.

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

Replacement Key **2KY455**

Selector
with mounting bracket

Other colors are available on request.

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

Extended Selector
with mounting bracket

Other colors are available on request.

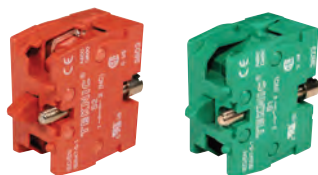| Color		Description	Cat No.
■ Black	∨	Maintained	2AS2E-1
■ Black	∨∨	Spring Return	2AS2E-2
■ Black	∨	Maintained	2AS2E-3
■ Black	∨∨	Spring Return	2AS2E-4
■ Black	∨∨	Spring Return	2AS2E-5
■ Black	∨∨	Spring Return	2AS2E-6

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.

START   STOP   ON   OFF

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*

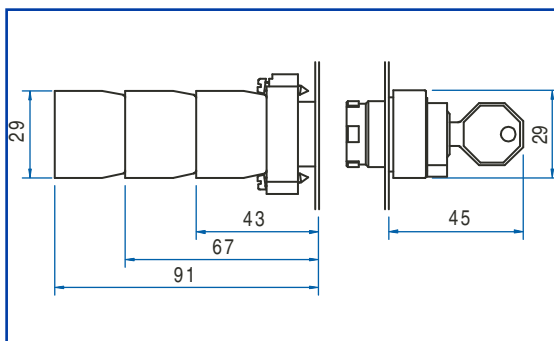|	
Normally Open Silver	**S5**
Normally Closed Silver	**S6**
Normally Open Gold Plated	**S7**
Normally Closed Gold Plated	**S8**

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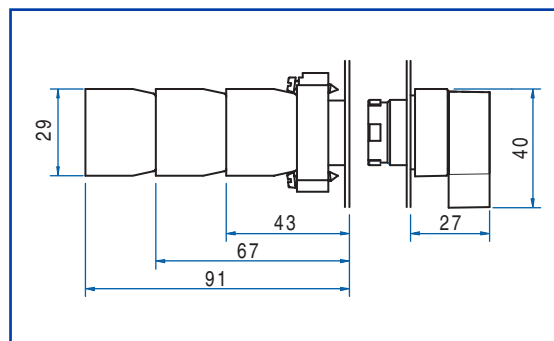
Altech

Dimensional Drawings
All dimensions shown in millimeters.
To convert to inches multiply by 0.03937
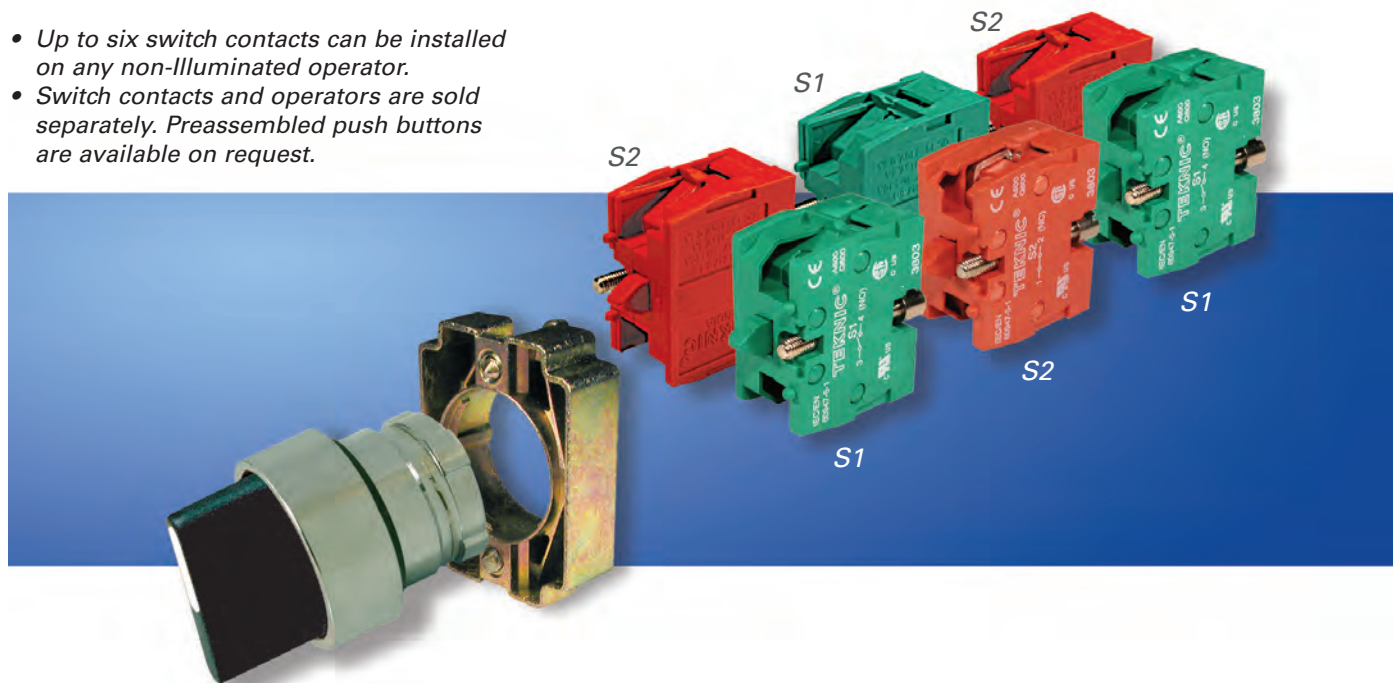
Key Selector

Extended Selector
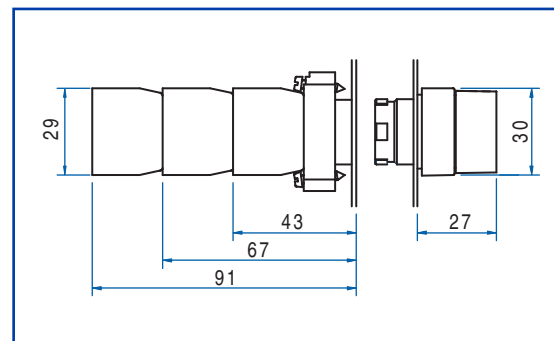
3 POSITION SELECTOR SWITCH CONTACT BLOCK GUIDE

⊘	↑	⊘	CONTACTOR BLOCK GUIDE
×	○	○	1 NO (left)
○	×	○	2 NC in series (side × side)
○	○	×	1 NO (right)
×	×	○	1 NC (right)
○	×	×	1 NC (left)
×	○	×	2 NO in parallel (side × side)

(Left or right as seen from front of operator)

Selector

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.

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

17

22mm LED Illuminated Metal Selector Switch Operators

CSA · UL E225660 · CE · VDE

Certified for
NEMA Type 4X
12 environment.

Selector
*with bulb holder,
LED bulb and
mounting bracket*
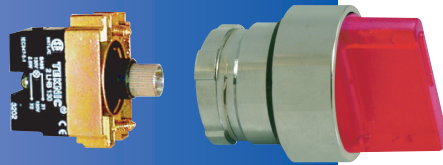
Other combinations and colors available upon request.
Please contact Altech for further information and part numbers.

XXX = Voltage Codes

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

SAMPLE ASSEMBLY

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

Replacement
bulbs available.
See page 39.

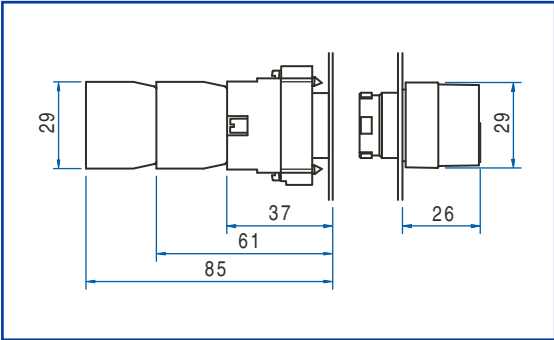| Color		Function	Cat No.
2 Position			
☐ White		Maintained	2ASL1LB-1-XXX
🟩 Green		Maintained	2ASL3LB-1-XXX
🟥 Red		Maintained	2ASL4LB-1-XXX
🟧 Amber		Maintained	2ASL5LB-1-XXX
🟦 Blue		Maintained	2ASL6LB-1-XXX
☐ Clear		Maintained	2ASL7LB-1-XXX
🟨 Yelllow		Maintained	2ASL8LB-1-XXX
2 Position			
☐ White		Spring Return	2ASL1LB-2-XXX
🟩 Green		Spring Return	2ASL3LB-2-XXX
🟥 Red		Spring Return	2ASL4LB-2-XXX
🟧 Amber		Spring Return	2ASL5LB-2-XXX
🟦 Blue		Spring Return	2ASL6LB-2-XXX
☐ Clear		Spring Return	2ASL7LB-2-XXX
🟨 Yelllow		Spring Return	2ASL8LB-2-XXX
3 Position			
☐ White		Maintained	2ASL1LB-3-XXX
🟩 Green		Maintained	2ASL3LB-3-XXX
🟥 Red		Maintained	2ASL4LB-3-XXX
🟧 Amber		Maintained	2ASL5LB-3-XXX
🟦 Blue		Maintained	2ASL6LB-3-XXX
☐ Clear		Maintained	2ASL7LB-3-XXX
🟨 Yelllow		Maintained	2ASL8LB-3-XXX
3 Position, *spring return from left and right*			
☐ White		Spring Return	2ASL1LB-4-XXX
🟩 Green		Spring Return	2ASL3LB-4-XXX
🟥 Red		Spring Return	2ASL4LB-4-XXX
🟧 Amber		Spring Return	2ASL5LB-4-XXX
🟦 Blue		Spring Return	2ASL6LB-4-XXX
☐ Clear		Spring Return	2ASL7LB-4-XXX
🟨 Yelllow		Spring Return	2ASL8LB-4-XXX
3 Position, *spring return from right*			
☐ White		Spring Return	2ASL1LB-5-XXX
🟩 Green		Spring Return	2ASL3LB-5-XXX
🟥 Red		Spring Return	2ASL4LB-5-XXX
🟧 Amber		Spring Return	2ASL5LB-5-XXX
🟦 Blue		Spring Return	2ASL6LB-5-XXX
☐ Clear		Spring Return	2ASL7LB-5-XXX
🟨 Yelllow		Spring Return	2ASL8LB-5-XXX
3 Position, *spring return from left*			
☐ White		Spring Return	2ASL1LB-6-XXX
🟩 Green		Spring Return	2ASL3LB-6-XXX
🟥 Red		Spring Return	2ASL4LB-6-XXX
🟧 Amber		Spring Return	2ASL5LB-6-XXX
🟦 Blue		Spring Return	2ASL6LB-6-XXX
☐ Clear		Spring Return	2ASL7LB-6-XXX
🟨 Yelllow		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

⦵	⦵	⦵	CONTACTOR BLOCK GUIDE
×	O	O	1 NO (left)
O	×	O	2 NC in series (side × side)
O	O	×	1 NO (right)
×	×	O	1 NC (right)
O	×	×	1 NC (left)
×	O	×	2 NO in parallel (side × side)

(Left or right as seen from front of operator)

Illuminated Selector

29 · 37 · 61 · 85 · 26 · 29

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.*

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

19

22mm LED Illuminated Metal Projecting Operators

Certified for
NEMA Type 4X
12 environment.

Projecting Momentary
withbulb, bulb holder and mounting bracket
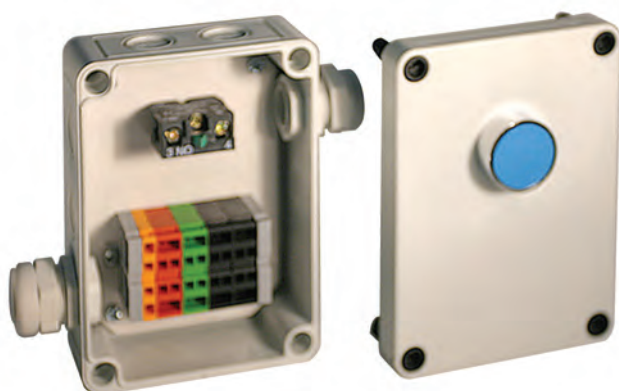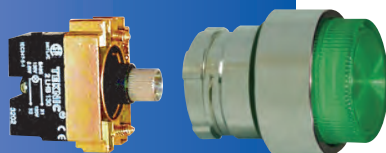
SAMPLE ASSEMBLY

Replacement bulbs available. See page 39.

	Color	Voltage	Cat No.
12V AC/DC			
☐	White	12V AC/DC	2ALP1LB-012
■	Green	12V AC/DC	2ALP3LB-012
■	Red	12V AC/DC	2ALP4LB-012
■	Amber	12V AC/DC	2ALP5LB-012
■	Blue	12V AC/DC	2ALP6LB-012
☐	Clear	12V AC/DC	2ALP7LB-012
■	Yelllow	12V AC/DC	2ALP8LB-012
24V AC/DC			
☐	White	24V AC/DC	2ALP1LB-024
■	Green	24V AC/DC	2ALP3LB-024
■	Red	24V AC/DC	2ALP4LB-024
■	Amber	24V AC/DC	2ALP5LB-024
■	Blue	24V AC/DC	2ALP6LB-024
☐	Clear	24V AC/DC	2ALP7LB-024
■	Yelllow	24V AC/DC	2ALP8LB-024
48V AC/DC			
☐	White	48V AC/DC	2ALP1LB-048
■	Green	48V AC/DC	2ALP3LB-048
■	Red	48V AC/DC	2ALP4LB-048
■	Amber	48V AC/DC	2ALP5LB-048
■	Blue	48V AC/DC	2ALP6LB-048
☐	Clear	48V AC/DC	2ALP7LB-048
■	Yelllow	48V AC/DC	2ALP8LB-048
110V AC			
☐	White	110V AC	2ALP1LB-110
■	Green	110V AC	2ALP3LB-110
■	Red	110V AC	2ALP4LB-110
■	Amber	110V AC	2ALP5LB-110
■	Blue	110V AC	2ALP6LB-110
☐	Clear	110V AC	2ALP7LB-110
■	Yelllow	110V AC	2ALP8LB-110
110V DC			
☐	White	110V DC	2ALP1LB-110D
■	Green	110V DC	2ALP3LB-110D
■	Red	110V DC	2ALP4LB-110D
■	Amber	110V DC	2ALP5LB-110D
■	Blue	110V DC	2ALP6LB-110D
☐	Clear	110V DC	2ALP7LB-110D
■	Yelllow	110V DC	2ALP8LB-110D
230V AC			
☐	White	230V AC	2ALP1LB-230
■	Green	230V AC	2ALP3LB-230
■	Red	230V AC	2ALP4LB-230
■	Amber	230V AC	2ALP5LB-230
■	Blue	230V AC	2ALP6LB-230
☐	Clear	230V AC	2ALP7LB-230
■	Yelllow	230V AC	2ALP8LB-230
230V DC			
☐	White	230V DC	2ALP1LB-230D
■	Green	230V DC	2ALP3LB-230D
■	Red	230V DC	2ALP4LB-230D
■	Amber	230V DC	2ALP5LB-230D
■	Blue	230V DC	2ALP6LB-230D
☐	Clear	230V DC	2ALP7LB-230D
■	Yelllow	230V DC	2ALP8LB-230D

22mm LED Illuminated Metal Projecting Operators

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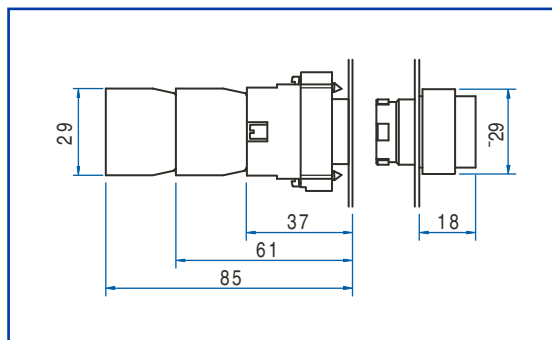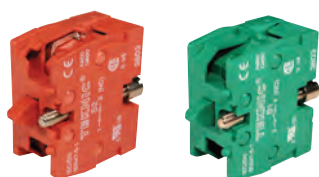To convert to inches multiply by 0.03937

Projecting Momentary

29

~29

37
61
85
18

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.*

S1
S2
S2
S1
2PPM

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

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

21

22mm LED Illuminated Metal Flush Operators

Certified for
NEMA Type 4X
12 environment.

E225660

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.

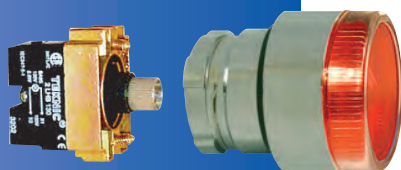| Color	Voltage	Cat No.
12V AC/DC		
White	12V AC/DC	2ALF1LB-012
Green	12V AC/DC	2ALF3LB-012
Red	12V AC/DC	2ALF4LB-012
Amber	12V AC/DC	2ALF5LB-012
Blue	12V AC/DC	2ALF6LB-012
Clear	12V AC/DC	2ALF7LB-012
Yelllow	12V AC/DC	2ALF8LB-012
24V AC/DC		
White	24V AC/DC	2ALF1LB-024
Green	24V AC/DC	2ALF3LB-024
Red	24V AC/DC	2ALF4LB-024
Amber	24V AC/DC	2ALF5LB-024
Blue	24V AC/DC	2ALF6LB-024
Clear	24V AC/DC	2ALF7LB-024
Yelllow	24V AC/DC	2ALF8LB-024
48V AC/DC		
White	48V AC/DC	2ALF1LB-048
Green	48V AC/DC	2ALF3LB-048
Red	48V AC/DC	2ALF4LB-048
Amber	48V AC/DC	2ALF5LB-048
Blue	48V AC/DC	2ALF6LB-048
Clear	48V AC/DC	2ALF7LB-048
Yelllow	48V AC/DC	2ALF8LB-048
110V AC		
White	110V AC	2ALF1LB-110
Green	110V AC	2ALF3LB-110
Red	110V AC	2ALF4LB-110
Amber	110V AC	2ALF5LB-110
Blue	110V AC	2ALF6LB-110
Clear	110V AC	2ALF7LB-110
Yelllow	110V AC	2ALF8LB-110
110V DC		
White	110V DC	2ALF1LB-110D
Green	110V DC	2ALF3LB-110D
Red	110V DC	2ALF4LB-110D
Amber	110V DC	2ALF5LB-110D
Blue	110V DC	2ALF6LB-110D
Clear	110V DC	2ALF7LB-110D
Yelllow	110V DC	2ALF8LB-110D
230V AC		
White	230V AC	2ALF1LB-230
Green	230V AC	2ALF3LB-230
Red	230V AC	2ALF4LB-230
Amber	230V AC	2ALF5LB-230
Blue	230V AC	2ALF6LB-230
Clear	230V AC	2ALF7LB-230
Yelllow	230V AC	2ALF8LB-230
230V DC		
White	230V DC	2ALF1LB-230D
Green	230V DC	2ALF3LB-230D
Red	230V DC	2ALF4LB-230D
Amber	230V DC	2ALF5LB-230D
Blue	230V DC	2ALF6LB-230D
Clear	230V DC	2ALF7LB-230D
Yelllow	230V DC	2ALF8LB-230D

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.*

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

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

23

22mm LED Metal Pilot Lights

Certified for
NEMA Type 4X
12 environment.

Pilot Light

*with bulb, bulb holder
and mounting bracket*
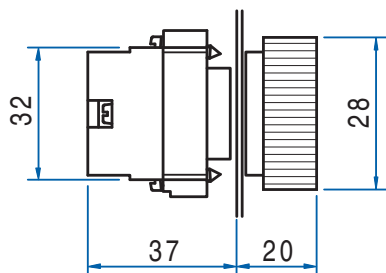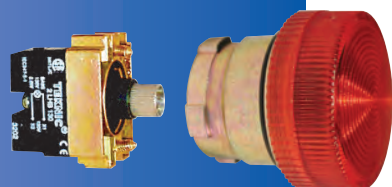
Replacement bulbs available.
See page 39.

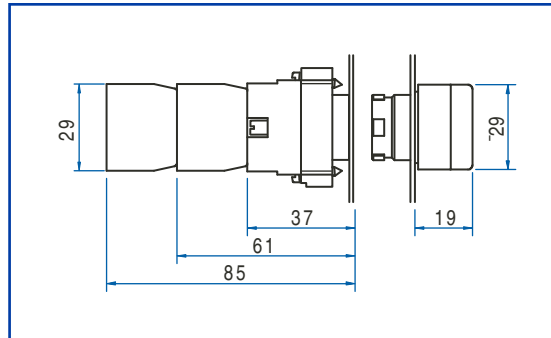| Color	Voltage	Cat No.
12V AC/DC		
White	12V AC/DC	2PLB1LB-012
Green	12V AC/DC	2PLB3LB-012
Red	12V AC/DC	2PLB4LB-012
Amber	12V AC/DC	2PLB5LB-012
Blue	12V AC/DC	2PLB6LB-012
Clear	12V AC/DC	2PLB7LB-012
Yelllow	12V AC/DC	2PLB8LB-012
24V AC/DC		
White	24V AC/DC	2PLB1LB-024
Green	24V AC/DC	2PLB3LB-024
Red	24V AC/DC	2PLB4LB-024
Amber	24V AC/DC	2PLB5LB-024
Blue	24V AC/DC	2PLB6LB-024
Clear	24V AC/DC	2PLB7LB-024
Yelllow	24V AC/DC	2PLB8LB-024
48V AC/DC		
White	48V AC/DC	2PLB1LB-048
Green	48V AC/DC	2PLB3LB-048
Red	48V AC/DC	2PLB4LB-048
Amber	48V AC/DC	2PLB5LB-048
Blue	48V AC/DC	2PLB6LB-048
Clear	48V AC/DC	2PLB7LB-048
Yelllow	48V AC/DC	2PLB8LB-048
110V AC		
White	110V AC	2PLB1LB-110
Green	110V AC	2PLB3LB-110
Red	110V AC	2PLB4LB-110
Amber	110V AC	2PLB5LB-110
Blue	110V AC	2PLB6LB-110
Clear	110V AC	2PLB7LB-110
Yelllow	110V AC	2PLB8LB-110
110V DC		
White	110V DC	2PLB1LB-110D
Green	110V DC	2PLB3LB-110D
Red	110V DC	2PLB4LB-110D
Amber	110V DC	2PLB5LB-110D
Blue	110V DC	2PLB6LB-110D
Clear	110V DC	2PLB7LB-110D
Yelllow	110V DC	2PLB8LB-110D
230V AC		
White	230V AC	2PLB1LB-230
Green	230V AC	2PLB3LB-230
Red	230V AC	2PLB4LB-230
Amber	230V AC	2PLB5LB-230
Blue	230V AC	2PLB6LB-230
Clear	230V AC	2PLB7LB-230
Yelllow	230V AC	2PLB8LB-230
230V DC		
White	230V DC	2PLB1LB-230D
Green	230V DC	2PLB3LB-230D
Red	230V DC	2PLB4LB-230D
Amber	230V DC	2PLB5LB-230D
Blue	230V DC	2PLB6LB-230D
Clear	230V DC	2PLB7LB-230D
Yelllow	230V DC	2PLB8LB-230D

Electrical and Mechanical Characteristics

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

Contact Block

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

Modules for Pilot Lights & Illuminated Switches with LED Bulbs

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

Torque Specifications

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

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

25

Economy Non-Illuminated Plastic Push Buttons

E225660

Momentary

Maintained

Color	Description & Function	Cat No.
Momentary		
White	Flush, 1NO Contact	3PSF110
Black	Flush, 1NO Contact	3PSF210
Green	Flush, 1NO Contact	3PSF310
Red	Flush, 1NO Contact	3PSF410
Blue	Flush, 1NO Contact	3PSF610
Yellow	Flush, 1NO Contact	3PSF810
White	Flush, 1NC Contact	3PSF101
Black	Flush, 1NC Contact	3PSF201
Green	Flush, 1NC Contact	3PSF301
Red	Flush, 1NC Contact	3PSF401
Blue	Flush, 1NC Contact	3PSF601
Yellow	Flush, 1NC Contact	3PSF801
White	Flush, 1NO + 1NC Contact	3PSF111
Black	Flush, 1NO + 1NC Contact	3PSF211
Green	Flush, 1NO + 1NC Contact	3PSF311
Red	Flush, 1NO + 1NC Contact	3PSF411
Blue	Flush, 1NO + 1NC Contact	3PSF611
Yellow	Flush, 1NO + 1NC Contact	3PSF811
White	Flush, 2NO Contact	3PSF120
Black	Flush, 2NO Contact	3PSF220
Green	Flush, 2NO Contact	3PSF320
Red	Flush, 2NO Contact	3PSF420
Blue	Flush, 2NO Contact	3PSF620
Yellow	Flush, 2NO Contact	3PSF820
White	Flush, 2NC Contact	3PSF102
Black	Flush, 2NC Contact	3PSF202
Green	Flush, 2NC Contact	3PSF302
Red	Flush, 2NC Contact	3PSF402
Blue	Flush, 2NC Contact	3PSF602
Yellow	Flush, 2NC Contact	3PSF802
Maintained		
White	Flush, 1NO Push-Push	3PSFPP110
Black	Flush, 1NO Push-Push	3PSFPP210
Green	Flush, 1NO Push-Push	3PSFPP310
Red	Flush, 1NO Push-Push	3PSFPP410
Blue	Flush, 1NO Push-Push	3PSFPP610
Yellow	Flush, 1NO Push-Push	3PSFPP810
White	Flush, 1NC Push-Push	3PSFPP101
Black	Flush, 1NC Push-Push	3PSFPP201
Green	Flush, 1NC Push-Push	3PSFPP301
Red	Flush, 1NC Push-Push	3PSFPP401
Blue	Flush, 1NC Push-Push	3PSFPP601
Yellow	Flush, 1NC Push-Push	3PSFPP801
White	Flush, 1NO + 1NC Push-Push	3PSFPP111
Black	Flush, 1NO + 1NC Push-Push	3PSFPP211
Green	Flush, 1NO + 1NC Push-Push	3PSFPP311
Red	Flush, 1NO + 1NC Push-Push	3PSFPP411
Blue	Flush, 1NO + 1NC Push-Push	3PSFPP611
Yellow	Flush, 1NO + 1NC Push-Push	3PSFPP811
White	Flush, 2NO Push-Push	3PSPP120
Black	Flush, 2NO Push-Push	3PSPP220
Green	Flush, 2NO Push-Push	3PSPP320
Red	Flush, 2NO Push-Push	3PSPP420
Blue	Flush, 2NO Push-Push	3PSPP620
Yellow	Flush, 2NO Push-Push	3PSPP820
White	Flush, 2NC Push-Push	3PSPP102
Black	Flush, 2NC Push-Push	3PSPP202
Green	Flush, 2NC Push-Push	3PSPP302
Red	Flush, 2NC Push-Push	3PSPP402
Blue	Flush, 2NC Push-Push	3PSPP602
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	*For AC:* C300= 120V, make current 15A & break current 1.5A (thermal current=2.5A)
	For DC: R300= 125V, make or break current 0.22A (thermal current=1.0A)
Terminal Capacity for wiring	2 X 1.5mm²; 1 X 0.5mm² (min); 1 X 2.5mm² (max)
Contact Material	• Moving contact = Phosphor Bronze • Fixed Contact = Brass silver plated 2 microns
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

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

27
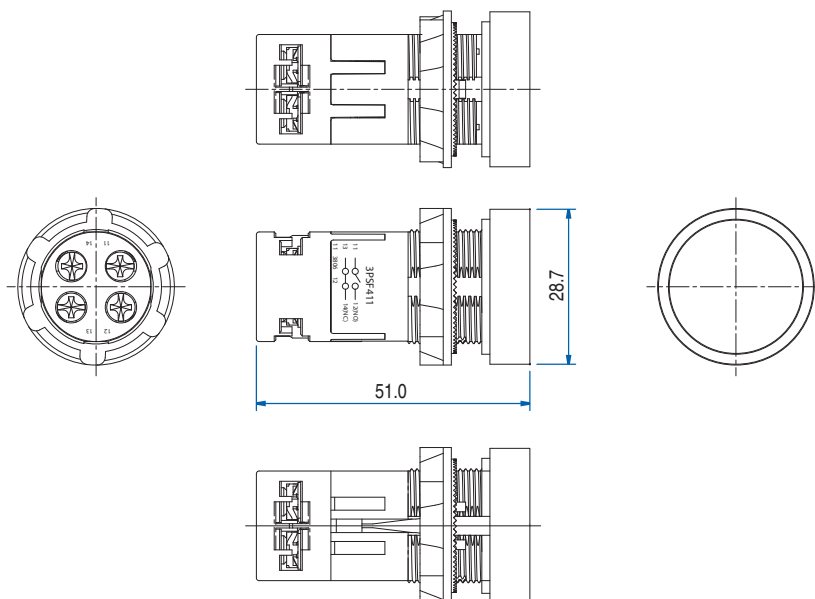
Unibody LED Indicator Plastic Pilot Lights

Pilot Lights
with integral LED

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

Color		Description	Cat No.
	White Lens/Yellow LED	12V AC/DC	3PLBR1L-012
	White Lens/Yellow LED	24V AC/DC	3PLBR1L-024
	White Lens/Yellow LED	48V AC/DC	3PLBR1L-048
	White Lens/Yellow LED	110V AC*	3PLBR1L-110
	White Lens/Yellow LED	230V AC*	3PLBR1L-230
	White Lens/White LED	12V AC/DC	3PLBR1LS-012
	White Lens/White LED	24V AC/DC	3PLBR1LS-024
	White Lens/White LED	48V AC/DC	3PLBR1LS-048
	White Lens/White LED	110V AC*	3PLBR1LS-110
	White Lens/White LED	230V AC*	3PLBR1LS-230
	Green Lens/Green LED	12V AC/DC	3PLBR3L-012
	Green Lens/Green LED	24V AC/DC	3PLBR3L-024
	Green Lens/Green LED	48V AC/DC	3PLBR3L-048
	Green Lens/Green LED	110V AC*	3PLBR3L-110
	Green Lens/Green LED	230V AC*	3PLBR3L-230
	Red Lens/Red LED	12V AC/DC	3PLBR4L-012
	Red Lens/Red LED	24V AC/DC	3PLBR4L-024
	Red Lens/Red LED	48V AC/DC	3PLBR4L-048
	Red Lens/Red LED	110V AC*	3PLBR4L-110
	Red Lens/Red LED	230V AC*	3PLBR4L-230
	Clear Lens /Red/Green LED	12V AC/DC	3PLBR34L-012
	Clear Lens /Red/Green LED	24V AC/DC	3PLBR34L-024
	Clear Lens /Red/Green LED	48V AC/DC	3PLBR34L-048
	Clear Lens /Red/Green LED	110V AC*	3PLBR34L-110
	Clear Lens /Red/Green LED	230V AC*	3PLBR34L-230
	Amber Lens/Amber LED	12V AC/DC	3PLBR5L-012
	Amber Lens/Amber LED	24V AC/DC	3PLBR5L-024
	Amber Lens/Amber LED	48V AC/DC	3PLBR5L-048
	Amber Lens/Amber LED	110V AC*	3PLBR5L-110
	Amber Lens/Amber LED	230V AC*	3PLBR5L-230
	Blue Lens/Blue LED	12V AC/DC	3PLBR6L-012
	Blue Lens/Blue LED	24V AC/DC	3PLBR6L-024
	Blue Lens/Blue LED	48V AC/DC	3PLBR6L-048
	Blue Lens/Blue LED	110V AC*	3PLBR6L-110
	Blue Lens/Blue LED	230V AC*	3PLBR6L-230
	Clear Lens/Yellow LED	12V AC/DC	3PLBR7L-012
	Clear Lens/Yellow LED	24V AC/DC	3PLBR7L-024
	Clear Lens/Yellow LED	48V AC/DC	3PLBR7L-048
	Clear Lens/Yellow LED	110V AC*	3PLBR7L-110
	Clear Lens/Yellow LED	230V AC*	3PLBR7L-230
	Clear Lens/White LED	12V AC/DC	3PLBR7LS-012
	Clear Lens/White LED	24V AC/DC	3PLBR7LS-024
	Clear Lens/White LED	48V AC/DC	3PLBR7LS-048
	Clear Lens/White LED	110V AC*	3PLBR7LS-110
	Clear Lens/White LED	230V AC*	3PLBR7LS-230
	Yellow Lens/Yellow LED	12V AC/DC	3PLBR8L-012
	Yellow Lens/Yellow LED	24V AC/DC	3PLBR8L-024
	Yellow Lens/Yellow LED	48V AC/DC	3PLBR8L-048
	Yellow Lens/Yellow LED	110V AC*	3PLBR8L-110
	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 1.5mm²
	1 X 0.5mm² (min)
	1 X 2.5mm² (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

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

29
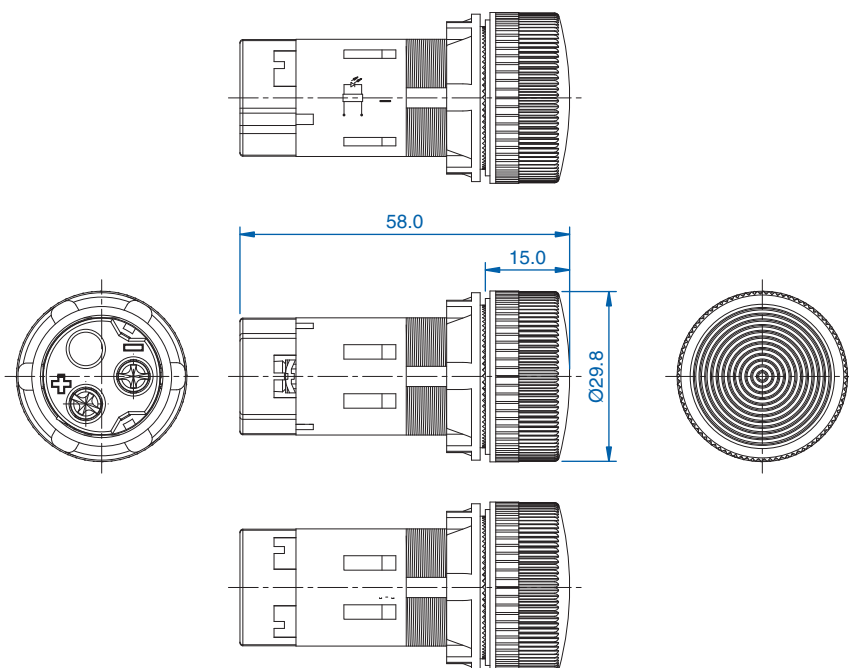
22mm Thermoplastic Enclosures

C US E225660 CE Certified for **NEMA Type 4X** 12 environment.

Base Mount Enclosures

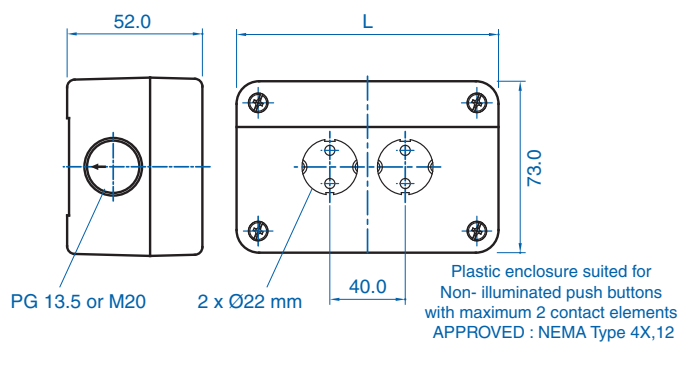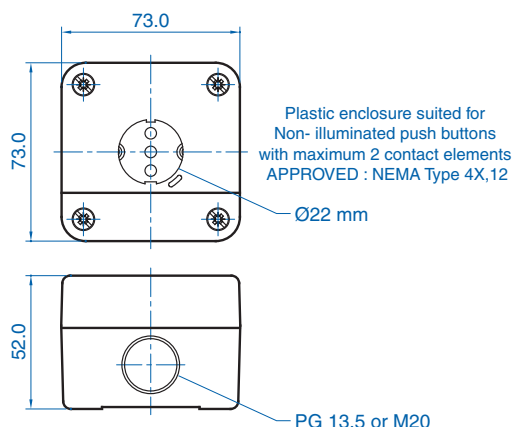| Cat. No.	Operator Capacity	Material	Long Description	Dimensions L x W x H	Cable Entry Knockouts	Mounting Hole Size
4003A11	1	Thermo Plastic	White Top/Black Bottom	73 X 73 X 52	2 x M20	(4) - 4.4x6.4
4003C11	2	Thermo Plastic	White Top/Black Bottom	113 X 73 X 52	2 x M20	(4) - 4.4x6.4
4003E11	3	Thermo 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

73.0
73.0
52.0

Plastic enclosure suited for Non- illuminated push buttons with maximum 2 contact elements APPROVED : NEMA Type 4X,12

Ø22 mm

PG 13.5 or M20

52.0 L 73.0 40.0

PG 13.5 or M20   2 x Ø22 mm

Plastic enclosure suited for Non- illuminated push buttons with maximum 2 contact elements APPROVED : NEMA Type 4X,12

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

Control Boxes

PROTECTION **IP65** RATING CE

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

Ø22
75
33 33 33 40
L
95
67
45 (max)
Inside Depth
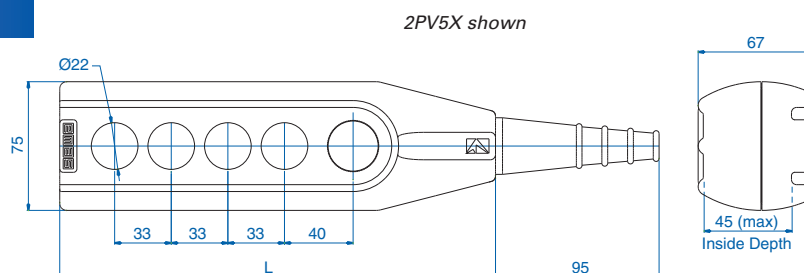
Contact Elements and Seal

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

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

22mm Thermoplastic Enclosure & Control Box Accessories

CSA us   UL c us E225660   CE   VDE   Certified for **NEMA Type 4X** 12 environment.

Flush
Momentary
with mounting bracket

Color	Function	Marking	Cat No.
White	Momentary	None	P2AF1
White	Momentary	Black arrow, up/down	P2AF1WA0
White	Momentary	Black arrow, left/right	P2AF1WA90
Black	Momentary	None	P2AF2
Black	Momentary	White arrow, up/down	P2AF2WA0
Black	Momentary	White arrow, left/right	P2AF2WA90
Green	Momentary	None	P2AF3
Red	Momentary	None	P2AF4
Blue	Momentary	None	P2AF6
Yellow	Momentary	None	P2AF8

Mushroom
Momentary/Maintained
with mounting bracket

Color	Function	Marking	Cat No.
Red	40mm Momentary	None	P2AM4
Red	40mm Push-Turn	⏺	P2AML4
Red	30mm Push-Turn	⏺	P2AMLS4
Red	40mm Push-Pull	⏺	P2AMPP4

Projecting
with mounting bracket

Color	Function	Marking	Cat No.
Black	Projecting	None	P2AP2
Green	Projecting	None	P2AP3
Red	Projecting	None	P2AP4
Blue	Projecting	None	P2AP6
Yellow	Projecting	None	P2AP8

Selector Switch
with mounting bracket

Color	Function	Marking	Cat No.
Black	Maintained / 2 position	None	P2AS2-1*
Black	Maintained / 3 position	None	P2AS2-3*
Black	Momentary / 3 position	None	P2AS2-4*

*Only for 22mm Thermoplastic Enclosures.

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

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 acheive 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)*

Switch Contacts

| Panel Mount		Base Mount	
Normally Open Silver	S1	Normally Open Silver	S5
Normally Closed Silver	S2	Normally Closed Silver	S6
Normally Open Gold plated	S3	Normally Open Gold plated	S7
Normally Closed Gold plated	S4	Normally Closed Gold plated	S8

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

31

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 it's proper location (see below).

Correct   Incorrect
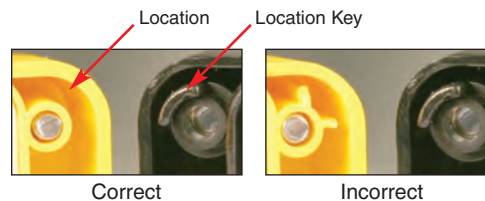
Intended Use

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, knockout 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

Knockout

Back of Enclosure (base)

Panel Mount Contact Blocks
Mounting Bracket
Mounting Nut
Front of Enclosure (cover)

Legend Plate

Rubber Gasket

Push Button Operator
(any non-illuminated type)

Base Mount Contact Block Installation

Knockout

Back of Enclosure (base)

Base Mount Contact Blocks
Rotational Washer (for push-turn E-Stop)
Mounting Nut
Front of Enclosure (cover)

Legend Plate

Rubber Gasket

Push Button Operator
(any non-illuminated type)

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

33

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
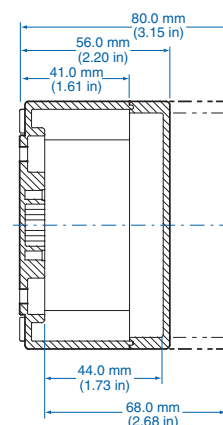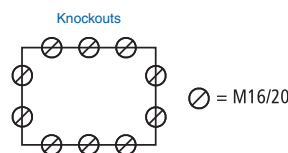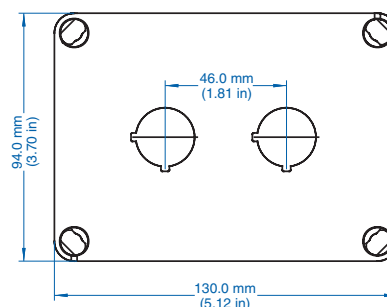- **Color:** Light Gray
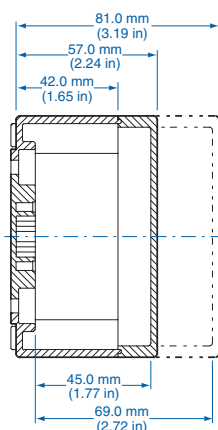- **Accessories:** See section below

IP66 when suitable installation devices are used.

153-905
153-904
153-902
153-903
153-601
Custom
Custom
153-901
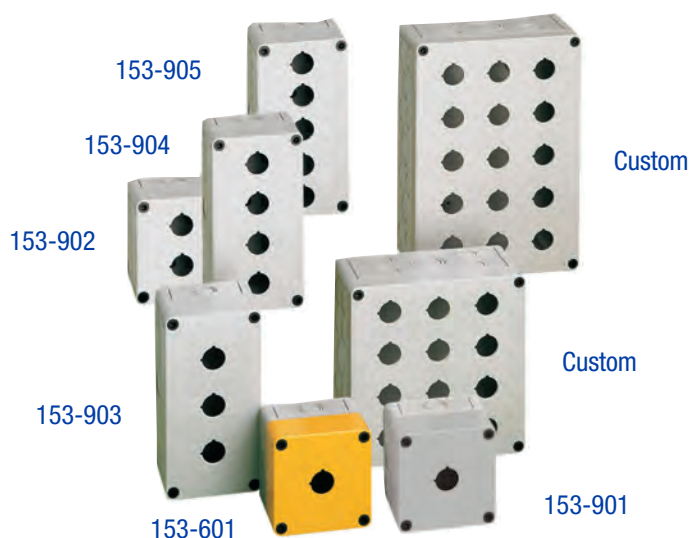
Ordering Information	Cat. No.	Length	Width	Height	Std. Pk.
One hole enclosure	153-901	94 mm (3.70 in)	94 mm (3.70 in)	81 mm (3.19 in)	1
One hole enclosure (Yellow cover)	153-601	94 mm (3.70 in)	94 mm (3.70 in)	81 mm (3.19 in)	1
Two hole enclosure	153-902	130 mm (5.12 in)	94 mm (3.70 in)	81 mm (3.19 in)	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

94.0 mm (3.70 in)
94.0 mm (3.70 in)
81.0 mm (3.19 in)
57.0 mm (2.24 in)
42.0 mm (1.65 in)
45.0 mm (1.77 in)
69.0 mm (2.72 in)

Knockouts
⊘ = M16/20

94.0 mm (3.70 in)
46.0 mm (1.81 in)
130.0 mm (5.12 in)
80.0 mm (3.15 in)
56.0 mm (2.20 in)
41.0 mm (1.61 in)
44.0 mm (1.73 in)
68.0 mm (2.68 in)

Knockouts
⊘ = M16/20

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

80.0 mm (3.15 in)
56.0 mm (2.20 in)
41.0 mm (1.61 in)
94.0 mm (3.70 in)
46.0 mm (1.81 in)   46.0 mm (1.81 in)
180.0 mm (7.09 in)
44.0 mm (1.73 in)
68.0 mm (2.68 in)

Knockouts

⊘ = M16/20

80.0 mm (3.15 in)
56.0 mm (2.20 in)
41.0 mm (1.61 in)
94.0 mm (3.70 in)
41.0 mm (1.61 in)   41.0 mm (1.61 in)   41.0 mm (1.61 in)
180.0 mm (7.09 in)
44.0 mm (1.73 in)
68.0 mm (2.68 in)

⊘ = M16/20

80.0 mm (3.15 in)
56.0 mm (2.20 in)
41.0 mm (1.61 in)
94.0 mm (3.70 in)
30.0 mm (1.18 in)   30.0 mm (1.18 in)   30.0 mm (1.18 in)   30.0 mm (1.18 in)
180.0 mm (7.09 in)
44.0 mm (1.73 in)
68.0 mm (2.68 in)

⊘ = M16/20

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

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

35

Aluminum Enclosures for 22mm Operators

UL c US
E225660

CE

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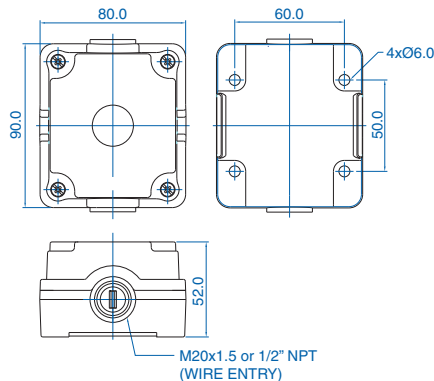**NEMA Type 4X**
12 environment.

Aluminum (52mm Height)
Pressure Die Cast

For base mount contact blocks and non-illuminated operators. 2 contact blocks maximum per operator.
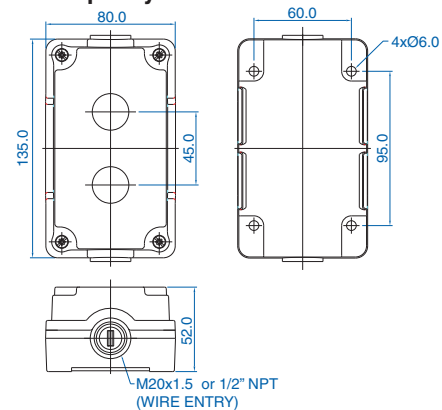
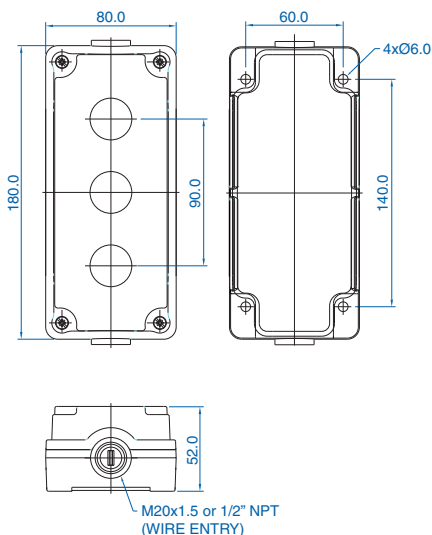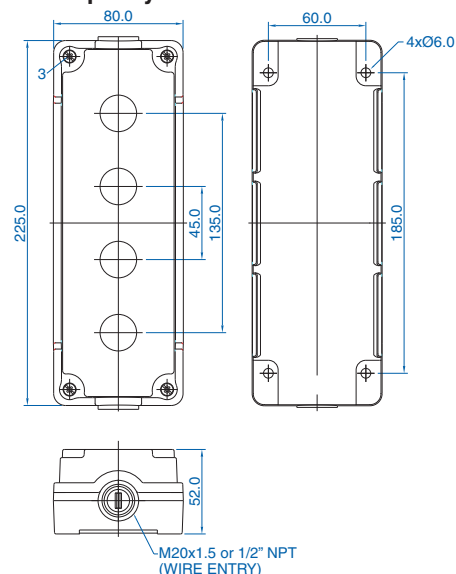| Cat. No.	Operator Capacity	Color Top/ Bottom	Construction	Dimensions LxWxH mm (in.)	Cable Entry Thread Size	Mounting Hole Dia.
2005A13	1	Black/Pebble Gray (RAL 7032)	PDC Aluminum	80x90x52 (3.15x3.54x2.05)	2xM20	4 x 6mm
2006C13	2	Black/Pebble Gray (RAL 7032)	PDC Aluminum	80x135x52 (3.15x5.32x2.05)	2xM20	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.

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

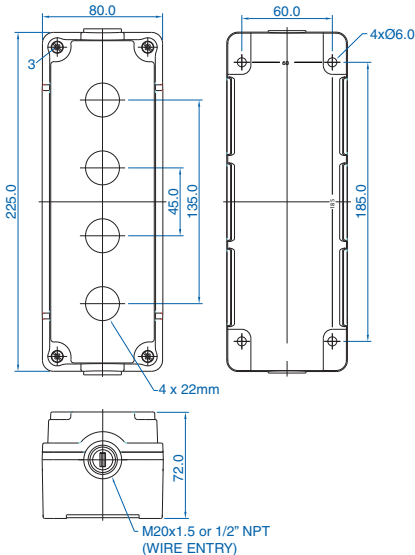### 1 - Operator Capacity
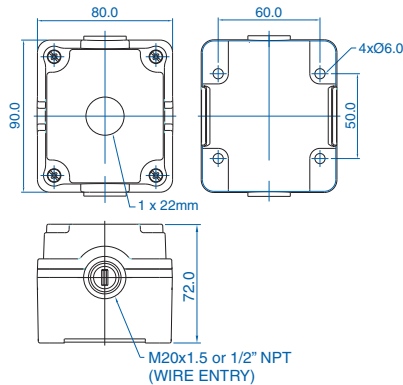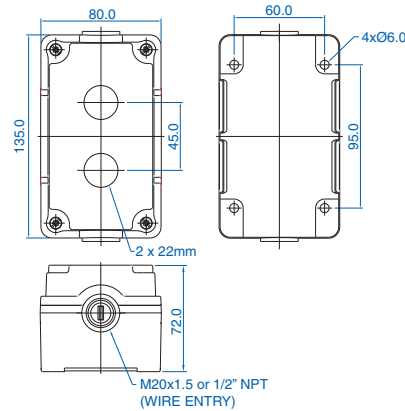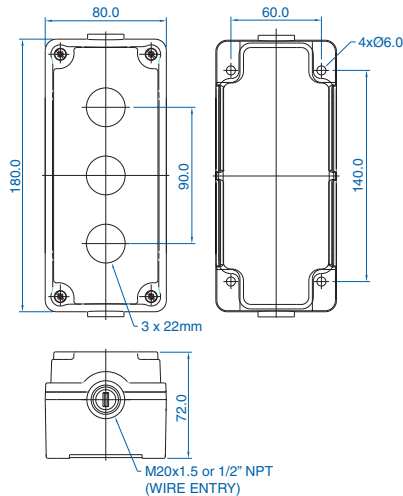
2 - Operator Capacity

3 - Operator Capacity
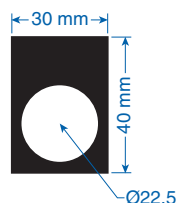

4 - Operator Capacity

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

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com
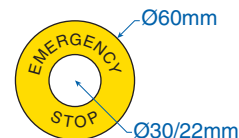
37

22mm Push Button Accessories

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

EMERGENCY STOP
LP41 / 2LP41 (only)
Legend plate Ø 60mm yellow with black text.
Not to be used with thermoplastic enclosures.

Please visit altechcorp.com/pb for other available legend plates.

English

Title	Cat No.	Title	Cat No.
AUTO	2LP09	OFF - ON	2LP46
AUTO HAND	2LP32	ON	2LP15
AUTO - MAN	2LP43	ON OFF	2LP30
B PHASE	2LP27	OPEN	2LP07
Blank Aluminum	2LP40	OVER	2LP74
BOTTOM HEAT	2LP101	OXY - ATM - AUTO	2LP58
CLEAR	2LP51	OXY - AUTO - ATM	2LP57
CLOSE	2LP08	POSITION , A B	2LP48
CLUTCH ON/OFF	2LP73	POWER ON	2LP20
Cycle Stop	2LP55	PUSHER CYCLE	2LP104
DOWN	2LP06	R PHASE	2LP25
EMERGENCY STOP	2LP41	RAISE - LOWER	2LP44
Emergency Stop (black)	2LP56	READY	2LP49
Emergency Stop (red)	2LP66	REMOTE	2LP22
FAST	2LP12	RESET	2LP13
FAULT	2LP107	RESET/MANUAL/AUTO	2LP103
FILM FEED	2LP105	REV FWD	2LP31
FOR-OFF-REV	2LP42	REV - OFF - FWD	2LP59
FORWARD	2LP03	REVERSE	2LP04
FWD - REV	2LP47	RIGHT	2LP17
HAND	2LP10	RUN	2LP24
HAND O AUTO	2LP36	SHEAR	2LP70
HOLD	2LP50	SIDE HEAT	2LP102
I II	2LP34	SLOW	2LP11
I O II	2LP39	SLOW OFF FAST	2LP37
INCH	2LP14	START	2LP01
INFEED	2LP72	START STOP	2LP28
INFEED ON/OFF	2LP71	STOP (red)	2LP02
JOG	2LP69	TEST	2LP23
JOG - RUN	2LP45	TRIP	2LP19
KNIFE CYCLE	2LP106	UNDERLOAD	2LP108
LEFT	2LP18	UP	2LP05
LOCAL	2LP21	UP DOWN	2LP29
LOCAL REMOTE	2LP33	UP OFF DOWN	2LP38
MAN O AUTO	2LP36	Y PHASE	2LP26
O I	2LP35		
OFF	2LP16	Temporary for Custom Imprint	2LPXX

Spanish

Title	Cat No.	Title	Cat No.
ABAJO	2LP06SP	ENCENDIDO	2LP20SP
ABRIR	2LP07SP	ENCENDIDO APAGADO	2LP30SP
ADELANTE	2LP03SP	FALLA	2LP19SP
ADELANTE ATRAS	2LP31SP	FUERA	2LP16SP
ARRANQUE	2LP01SP	IZQUIERDA	2LP18SP
ARRANQUE PARO	2LP28SP	LENTO	2LP14SP
ARRIBA	2LP05SP	LENTO FUERA RAPIDO	2LP37SP
ARRIBA ABAJO	2LP29SP	LOCAL REMOTO	2LP33SP
ARRIBA FUERA ABAJO	2LP38SP	MAN O AUTO	2LP36SP
ATRAS	2LP04SP	MANUAL	2LP10SP
AUTO MAN	2LP32SP	PARO	2LP02SP
CERRAR	2LP08SP	PARO DE EMERGENCIA	2LP41SP
DENTRO	2LP15SP	RAPIDO	2LP12SP
DERECHO	2LP17SP	REARME	2LP13SP

Replacement Lens for Illuminated Mushroom Operators

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

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 LED

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

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 LED (flush/projecting)

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

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.		Color	Voltage	Cat No.
12V AC/DC				**110V AC**		
White	12V AC/DC	MCB9112		White	110V AC	MCB91110
Green	12V AC/DC	MCB9312		Green	110V AC	MCB93110
Red	12V AC/DC	MCB9412		Red	110V AC	MCB94110
Amber	12V AC/DC	MCB9512		Amber	110V AC	MCB95110
Blue	12V AC/DC	MCB9612		Blue	110V AC	MCB96110
Yellow	12V AC/DC	MCB9812		Yellow	110V AC	MCB98110
24V AC/DC				**110V DC**		
White	24V AC/DC	MCB9124		White	110V DC	MCB91110D
Green	24V AC/DC	MCB9324		Green	110V DC	MCB93110D
Red	24V AC/DC	MCB9424		Red	110V DC	MCB94110D
Amber	24V AC/DC	MCB9524		Amber	110V DC	MCB95110D
Blue	24V AC/DC	MCB9624		Blue	110V DC	MCB96110D
Yellow	24V AC/DC	MCB9824		Yellow	110V DC	MCB98110D
48V AC/DC				**230V AC**		
White	48V AC/DC	MCB9148		White	230V AC	MCB91230
Green	48V AC/DC	MCB9348		Green	230V AC	MCB93230
Red	48V AC/DC	MCB9448		Red	230V AC	MCB94230
Amber	48V AC/DC	MCB9548		Amber	230V AC	MCB95230
Blue	48V AC/DC	MCB9648		Blue	230V AC	MCB96230
Yellow	48V AC/DC	MCB9848		Yellow	230V AC	MCB98230
				230V DC		
				White	230V DC	MCB91230D
				Green	230V DC	MCB93230D
				Red	230V DC	MCB94230D
				Amber	230V DC	MCB95230D
				Blue	230V DC	MCB96230D
				Yellow	230V DC	MCB98230D

Maximum Power Consumption:

Supply Voltage	LED Power (max) in Watts	LED Current	FILAMENT BULBS Power (max) in Watts	FILAMENT BULBS Current
12V	0.5W	max 20mA	2W	max 166mA
24V	0.5W	max 20mA	2W	max 85mA
48V	0.5W	max 20mA	2W	max 45mA
110V	0.5W	max 15mA	2.6W	max 20mA
240V	1W	max 10mA	2.6W	max 20mA

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

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

39

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	**S2**	**S3**	**S4**
Normally Open Silver	Normally Closed Silver	Normally Open Gold plated	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

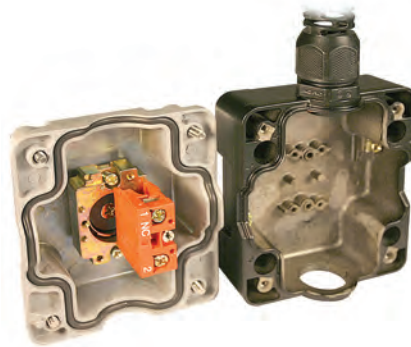| **S5**∗	**S6**∗	**S7**∗	**S8**∗
Normally Open Silver	Normally Closed Silver	Normally Open Gold plated	Normally Closed Gold plated

Mounting Examples:
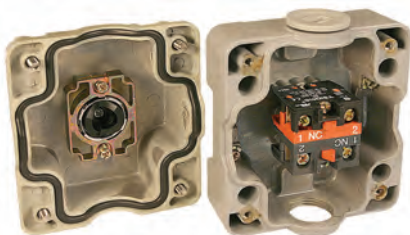
Cast Aluminum Enclosure
with base mount contacts
and metal operator

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.

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

41

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.
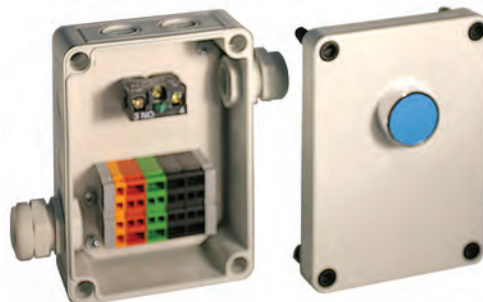
Pre-assembled or Ready to Assemble Control Stations

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.

Altech Corp.® • 35 Royal Road • Flemington, NJ 08822-6000 • Phone (908)806-9400 • FAX (908)806-9490 • www.altechcorp.com

43