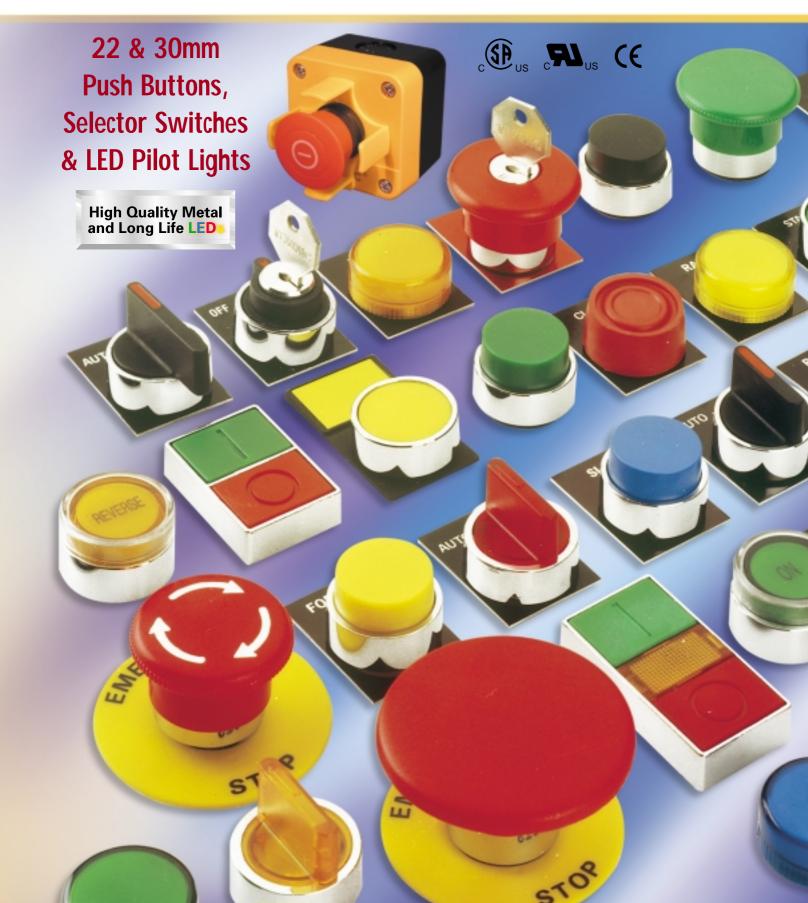
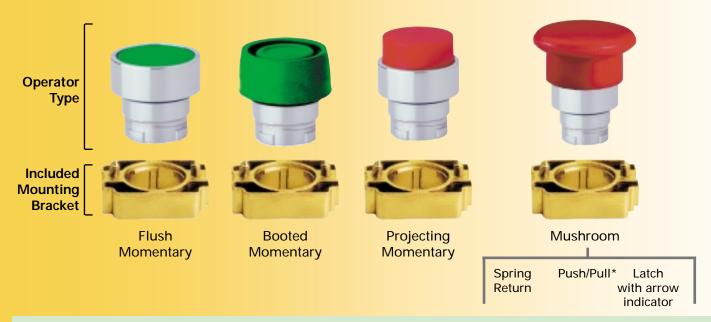
Altech Corp.®





Altech Corp. can provide other push button and actuator options. If your requirement calls for a 22 mm operator which is not shown, please do not hesitate to call.



	Push buttons								
Color	Cat. No.	Cat. No.	Cat. No.	Cat. No.					
□White	□ 2AF1	□ 2AB1	☐ 2AP1						
■ Black	■ 2AF2	■ 2AB2	■ 2AP2	■ 2AM2 ■ 2AMPP2 ■ 2AML2					
Green	2AF3	■ 2AB3	■ 2AP3	■ 2AM3					
Red	2AF4	■ 2AB4	■ 2AP4	■ 2AM4 ■ 2AMPP4 ■ 2AML4					
■ Blue	■ 2AF6	■ 2AB6	■ 2AP6	■ 2AM6					
☐ Yellow	□ 2AF8	□ 2AB8	□ 2AP8	□ 2AM8					

For push button and selector switch dimensions see page 7.

*Illuminated available, please contact Altech.





Panel Mount

Normally Open Silver **S1** Normally Closed Silver S2 Normally Open Gold **S**3 Normally Closed Gold **S4**

Base Mount

(for use with thermoplastic enclosures listed on page 5) Normally Open Silver **S**5 Normally Closed Silver **S6** Normally Open Gold **S7** Normally Closed Gold **S8**





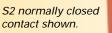
Certified for type 4X, 12 environment.













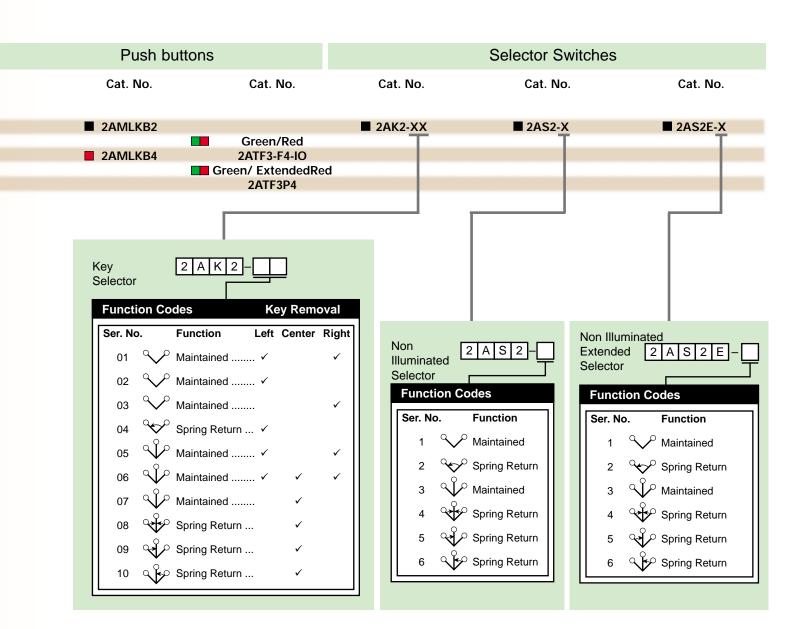
S1 normally open contact shown.

Up to six switch contacts can be installed on any non illuminated operator.

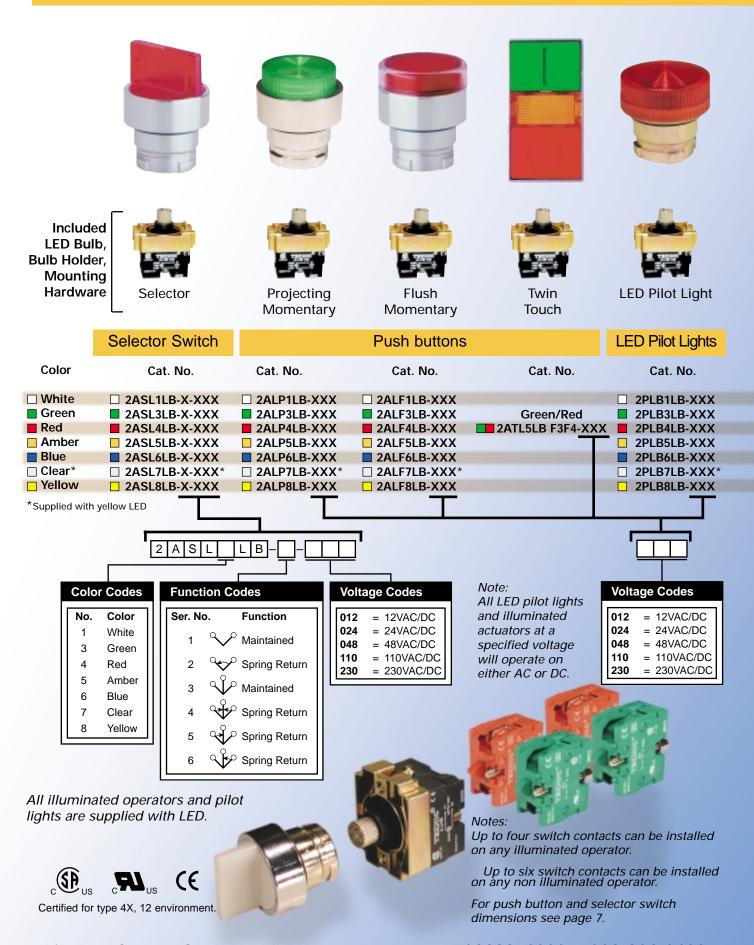
Up to four switch contacts can be installed on any illuminated operator.

22mm Non Illuminated Metal Operators





22mm LED Illuminated Operators & Pilot Lights



22mm Enclosures



Cat. No.	Operator Capacity	Color Top/ Bottom	Construction	Dimensions (LxWxH) mm*	Cable Entry Size	No. of Knockouts	Mounting Hole Dia.
2-004-A-12	1	Gray	Cast Aluminum	70 x 90 x 90	1 x M20 x 1.5mm	<u> </u>	8 mm
2-005-C-12	2	Gray	Cast Aluminum	70 x 90 x 135	2 x M20 x 1.5mm	_	8 mm
2-006-E-12	3	Gray	Cast Aluminum	70 x 90 x 180	2 x M20 x 1.5mm	_	8 mm
2-004-A-12	1	Gray	Cast Aluminum	52 x 80 x 90	2 x M20 x 1.5mm		6 mm
2-005-C-12	2	Gray	Cast Aluminum	52 x 80 x 135	2 x M20 x 1.5mm		6 mm
2-006-E-12	3	Gray	Cast Aluminum	52 x 80 x 180	2 x M20 x 1.5mm	_	6 mm
3-001-Q-11	1	White/ Black	Thermoplastic	50.5 x 68 x 68	2 x 21mm	2	_
4-001-Q-10	1	Yellow/ Black	Thermoplastic	50.5 x 68 x 68	2 x 21mm	2	_
3-001-R-11	2	White/ Black	Thermoplastic	50.5 x 68 x104	2 x 21mm	2	_
4-001-R-10	2	Yellow/ Black	Thermoplastic	50.5 x 68 x104	2 x 21mm	2	_

Custom assemblies available.

Contact Altech for custom imprinting, enclosure color options, custom legend plates and prewired push button stations.

E-Stop Shroud for 22 mm ——

Cat. No. Construction

2ESS1 Polimer Plastic
2ESS1-UL UL Plastic



To convert mm to inches,

22mm LED Illuminated Operators & Pilot Lights

Control and Signalling devices Ø 22.5

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

- Economy of space
- · Self Wiping Contact
- · Safe in operation
- Simple to mount (screw driver is all that is required)
- Fixing method unaffected by excessive vibration-unit
- Protection against electric shock (unit grounded)
- Aesthetically pleasing
- · Shrouded terminals
- Very good flame resistance
- Use of LEDs for long life and minimum

Actuators

The circular actuators have chrome plated metal bezels, and are interchangeable on the different types of 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.

LED Illuminated Actuators and Pilot Lights

LED illuminated actuators & pilot lights are supplied, LED in bayonet cap suitable for operating at various voltages. LED bulbs with bayonet cap are constructed in the standard BA9S design with OAL max. 28 mm.

Terminals

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

The control devices Ø 22.5 can be fixed in any position on panels of 1 to 6 mm (.039 -.236 in.) thickness. We recommend minimum fixing centers of 30 x 40 mm (1.2 x 1.57"). 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 adequately to such an extent as to pierce through the paint on the panel from inside. These screws also ensure the grounding of the unit.

Electrical and Mechanical Characteristics Environment

Standard conformity:

Approvals:

Degree of protection:

Ambient :

Operating position:

Contact Block

Rated insulation voltage: Rated thermal current: Contact operation: Make and break capacity as per IEC 947 - 5 - (1) 1990:

As per CSA - C22.2 No. 14-95, UL508:

Terminal capacity:

Terminal marking: Short circuit protection:

Mechanical life:

Electric rating (for 1 million operation cycles, operation at 3600 cycles per hour, load factor 0.5)

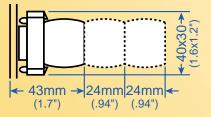
Modules for pilot light & illuminated switches with bulb LED

Current consumption (applicable to all colors) 24 VAC/DC, 100 VAC & 240 VAC:

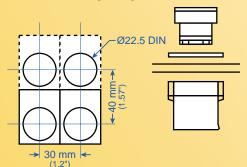
110 VDC: 220 VDC:

Service life (at nominal voltage and at ambient temperature of 25°C): Voltage limits (nominal voltage): Short circuit protection: Terminal capacity:

Heavy duty construction



Fixing Arrangement



IEC 60947-5-1 **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

CSA - C22.2 No. 14-95, UL508

IP 65 as per IEC 529, NEMA 4X, 12 as per UL 508

- 25°C to + 70°C All positions

500V 10A

Self wiping, slow break NO or NC

AC 15 4A, 415V AC DC 13 0.5A, 110V DC

A600 Q600

minimum 1 x 0.5 mm² (20 AWG), maximum 2 x 1.5² mm² (2x16 AWG)

or 1 x 2.5 mm² (1x14 AWG) 1-2 for NC, 3-4 for NO

10A cartridge fuse HRC type, rated for resistive loading

Over 1 million operations

max. 20 mA

max. 15 mA max. 10 mA 100,000 hours

<20% of rated voltage> on specific request

min. 1 x 0.5 mm² (20 AWG), max. 2 x 1.5 mm² (2x16 AWG)

or 1 x 2.5 mm² (1x14 AWG)

ALTECH CORP®, 35 ROYAL ROAD, FLEMINGTON, NJ 08822-6000 • 908.806.9400

22mm LED Illuminated Operators & Pilot Lights

Accessories and Spares

Legend plates 30 x 40 mm (1.2 x 1.6") (black with white characters) are supplied with the following standard texts:

START 2LP01	FORWARD 2LP03	UP 2LP05	OPEN 2LP07	AUTO 2LP09	SLOW 2LP11	RESET 2LP13	ON 2LP15	RIGHT 2LP17	TRIP 2LP19
STOP	REVERSE		CLOSE	HAND	FAST	INCH	OFF	LEFT	POWER ON
2LP02	2LP04	2LP06	2LP08	2LP10	2LP12	2LP14	2LP16	2LP18	2LP20

START/STOP UP/DOWN ON/OFF REV/FWD AUTO/HAND LOCAL/REMOTE O/I 1/11 2LP29 2LP30 2LP32 2LP33 2LP34 2LP35 2LP28 2LP31 HAND/O/AUTO SLOW/OFF/FAST UP/OFF/DOWN 1/0/11 **BLANK EMERGENCY STOP** 2LP36 2LP37 2LP38 2LP39 2LP40 2LP41

Custom Legends per customer specifications - 2LPXX

Lenses and Replacement Boots

Color Lenses for pilot lights with LED	White 2PLL1L	Green 2PLL3L	Red 2PLL4L	Amber 2PLL5L	Blue 2PLL6L	Clear 2PLL7L	Yellow 2PLL8L	
Lenses for illuminated actuators with LED (flush/projecting)	2LAL1L	2LAL3L	2LAL4L	2LAL5L	2LAL6L	2LAL7L	2LAL8L	
Boots for booted actuators	2BT2	2BT3	2BT4	-	2BT6	-	2BT8	



Color	White	Green	Red	Amber	Blue	Yellow	Voltage	
Type No.	MCB9124	MCB9324	MCB9424	MCB9524	MCB9624	MCB9824	24	
	MCB91110	MCB93110	MCB94110	MCB95110	MCB96110	MCB98110	110	
	MCB91230	MCB93230	MCB94230	MCB95230	MCB96230	MCB98230	230	

Push Push mechanism for converting spring return actuator into maintained

Type No.: 2PPM

Adapter for fixing Ø 22.5 devices in Ø 30.5 cutout

Type No.: 2ADP **Mounting Bracket**

Type No.: 2BRK

30.5 mm

Type No.: 2BKKT (Thin Bracket for Plastic Enclosure)

For mushroom actuator: For projecting actuator:

Type No.: 2PAM Type No.: 2PAP



Transparent Silicone Rubber Boot for Flush Actuators Color:

Legend plate Ø 60 mm

yellow with black characters for EMERGENCY STOP.

Clear Type No.: 2BT7

Rubber Boot for Twin Actuator

Color:

2ATBT7 (non illuminated) Type No.:

2ATLBT7 (illuminated)

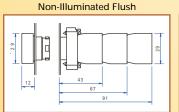
Blanking plug for 22.5 mm holes

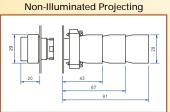
Color: Black 2BP2 Type No.: **Bulb Extractor**

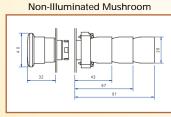
Type No: 2BA9SE

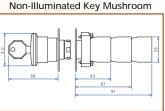


Push button Diagrams (to convert to inches multiply by 0.03937)



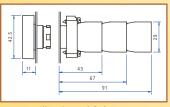


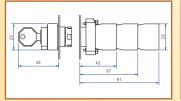




Ø60.5

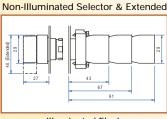
Non-Illuminated Double Head Flush

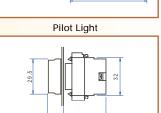




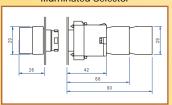
Illuminated Projecting

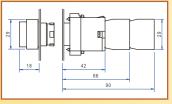
Non-Illuminated Key Selector



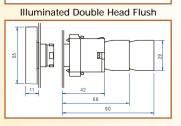


Illuminated Selector

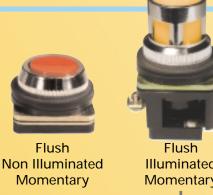








30 mm Push Buttons



	-	
	Flush	'
Illu	minat	ed
Mo	menta	ary
	100	





Projecting Momentary

Selector Maintained Momentary

	2 Position	3 Position	2 Positi	on
Cat. No.	Cat. No.	Cat. No.	Cat.	No.
□ A P1				

Color Cat. No. White

□ AF1

AF6

AF8

☐ ALF1-XXX

☐ ALF7-XXX

☐ ALF8-XXX

Filament

Bulb

Cat. No.

☐ ALF1LB-XXX ALF3LB-XXX

LED

Bulb

Cat. No.

□ AB1 AB2 AB3

Booted

Momentary

Cat. No.

 $\sqcap A$ AP2 AP3 AP4

■AS2-2P ■AS2-3P ■AS2-2PSR

See diagam below.

S12

Black AF2 Green AF3 Red

Amber

Blue

Yellow

Clear*

- ALF3-XXX AF4 ■ ALF4-XXX ■ ALF5-XXX
 - ALF4LB-XXX ■ ALF5LB-XXX ■ ALF6-XXX ALF6LB-XXX

■ ALF7LB-XXX*

☐ ALF8LB-XXX

AB6

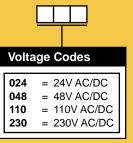
AB4

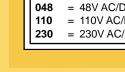
- AP6
- AP8 AB8



Note: and illuminated actuators at a









Certified for type 4X, 12 environment.

Up to 4 contact blocks may be installed on any non illuminated actuator. This will give the user up to 4 NO and 4 NC contacts. With an illuminated actuator (ALF series), 2 contact blocks may be installed.

30 mm Contact Elements

Description

Cat. No.

1 Normally Open + 1 Normally Closed

S11

Silver Contacts

2 Normally Open + 2 Normally Closed S11 + S12

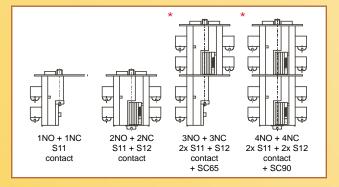
Silver Contacts

For additional contacts, see diagram at right.

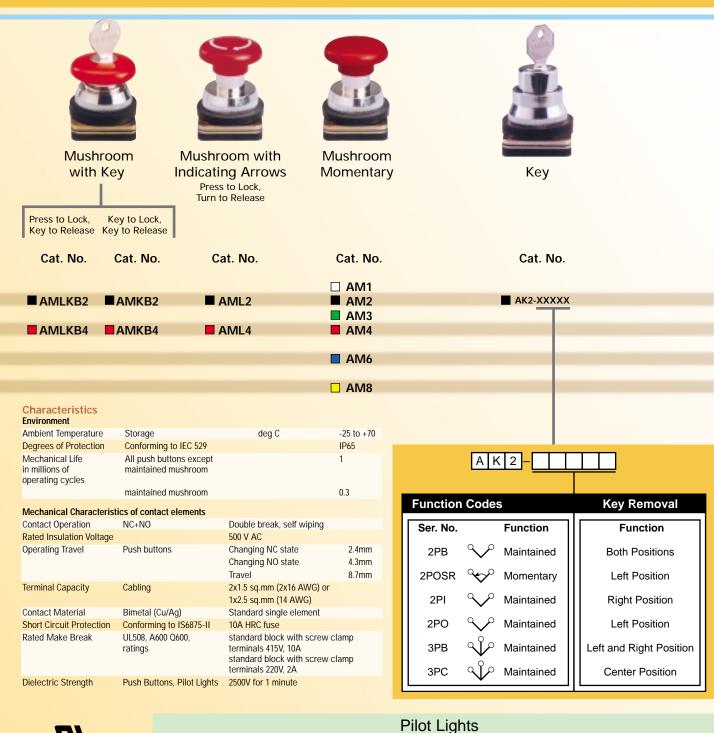
* When using more than two contacts additional screws need to purchased separtely (SC45 and SC90).

Contact Installation Screws								
Type	Dimensions	Used with						
SC25	Dimensions M4 x 25 mm	S11						
SC45	M4 v 45 mm	S12 S11 ± S						

SC45	M4 x 45 mm	S12, S11 + S12
SC65	M4 x 65 mm	2x S11 + S12
SC90	M4 x 90 mm	S12, S11 + S12 2x S11 + S12 2x S11 + 2x S12



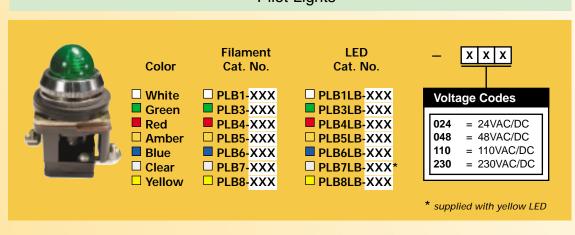
30 mm Push Buttons





Certified for type 4X, 12 environment.

Note: All LED pilot lights and illuminated actuators at a specified voltage will operate on either AC or DC.



30 mm Push Buttons and LED Pilot Lights

SLOW

Blue

PLL6

ALL6

Blue

BT6

Accessories and Spares

Legend plates 30 x 40 mm (1.2 x 1.6") (black with white characters) are supplied with the

ODEN

LID

following standard texts: FORWARD

SIAKI	FURWARD	UP	OPEN	AUIU	SLOW
LP01	LP03	LP05	LP07	LP09	LP11
ON	RIGHT	TRIP	STOP	REVERSE	DOWN
LP15	LP17	LP19	LP02	LP04	LP06
HAND	FAST	INCH	OFF	LEFT	POWER ON
LP10	LP12	LP14	LP16	LP18	LP20



Legend plate 60mm diameter yellow with black characters for EMERGENCY STOP

Padlock

For mushroom actuator: Type No.: PAM For projecting actuator: Type No.: PAP



BT3

ALITO



RESET LP13 CLOSE LP08



PLL8

ALL8

Lenses and Replacement Boots

Color	White	Black	Green				
Rubber Boots for Booted Actuators							
Lenses for illuminated actuators	ALL1	ALL3	ALL4				
Lenses for pilot lights	PLL1	PLL3	Rea PLL4				

BT1



Clear

PLL7

ALL7

Yellow

BT8



Spare LED) Bulbs				
-	Color	24V AC/DC	48V AC/DC	110V AC/DC	230V AC/DC
[White	MCB15124	MCB15148	MCB151110	MCB151230
	Green	MCB15324	MCB15348	MCB153110	MCB153230
	Red	MCB15424	MCB15448	MCB154110	MCB154230
	Amber	MCB15524	MCB15548	MCB155110	MCB155230

BT2



S

Boot

COIOI	24V AC/DC	40V AC/DC	TIOV AC/DC	230V AC/DC
☐ White	MCB15124	MCB15148	MCB151110	MCB151230
Green	MCB15324	MCB15348	MCB153110	MCB153230
Red	MCB15424	MCB15448	MCB154110	MCB154230
Amber	MCB15524	MCB15548	MCB155110	MCB155230
Blue	MCB15624	MCB15648	MCB156110	MCB156230
Yellow	MCB15824	MCB15848	MCB158110	MCB158230



Type No: 2BA9SE

Spare Filament Bulbs

24V AC/DC	48V AC/DC
BA15D24	BA15D48

110V AC/DC	230V AC/DC
BA15D110	BA15D230

Amber

PLL5

ALL5

Red

BT4



Contact Block Installation Screws

Туре	Dimensions	used with
SC25	M4 x 25 mm	S11 only
SC45	M4 x 45 mm	S12, S11 + S12 (2NO + 2NC)
SC65	M4 x 65 mm	2 x S11 + S12 (3NO +3NC)
SC90	M4 x 90 mm	2 x S11 + 2 x S12 (4NO +4NC)

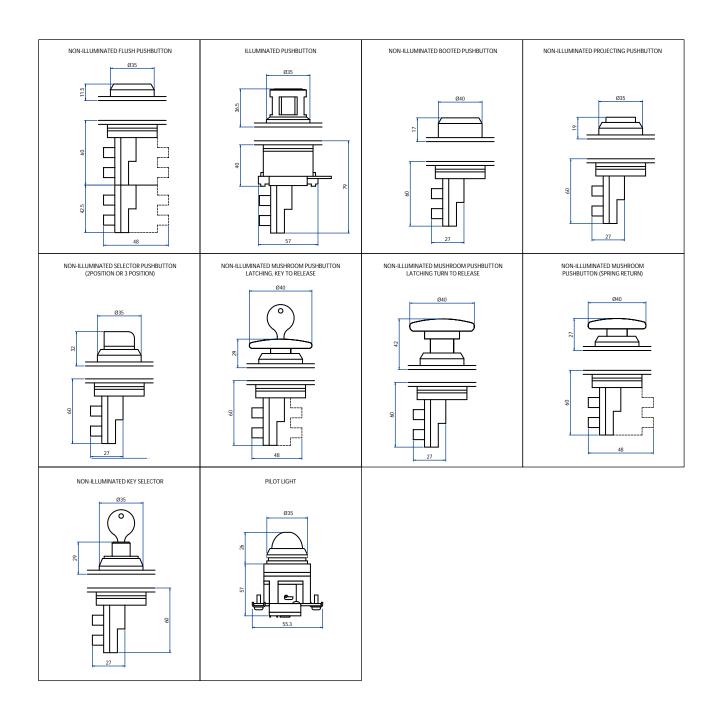
30mm Enclosures





Cat. No.	Operator Capacity	Color Top/ Bottom	Construction	Dimensions (LxWxH) mm*	Cable Entry Size	Mounting Hole (Dia.)
1-002-A-12	1	Gray	Cast Aluminum	70 x 90 x 90	1 x M20 x 1.5 mm	8 mm
1-003-C-12	2	Gray	Cast Aluminum	70 x 90 x 135	2 x M20 x 1.5 mm	8 mm
1-004-E-12	3	Gray	Cast Aluminum	70 x 90 x 180	2 x M2 0x 1.5 mm	8 mm

^{*} To convert mm to inches, divide mm by 25.4.



(to convert to inches multiply by 0.03937)

www.altechcorp.com



PRODUCT LINES

- Miniature Circuit Breakers
- DIN Enclosures
- Electronic Enclosures
- European Fuses
- Foot Switches
- Inductive Proximity Sensors
- Industrial Enclosures
- Interface Modules
- Liquid Tight Strain Reliefs
- Metal Detection Systems
- Motor Disconnect Switches
- Pin and Sleeve Devices
- Push Buttons
- Safety Relays
- Terminal Blocks
- Safety Relays

Altech Corporation 35 Royal Road Flemington, NJ 08822-6000 Phone (908) 806-9400 Fax (908) 806-9490 www.altechcorp.com

Altech Corp.® 255-012004-7.5M