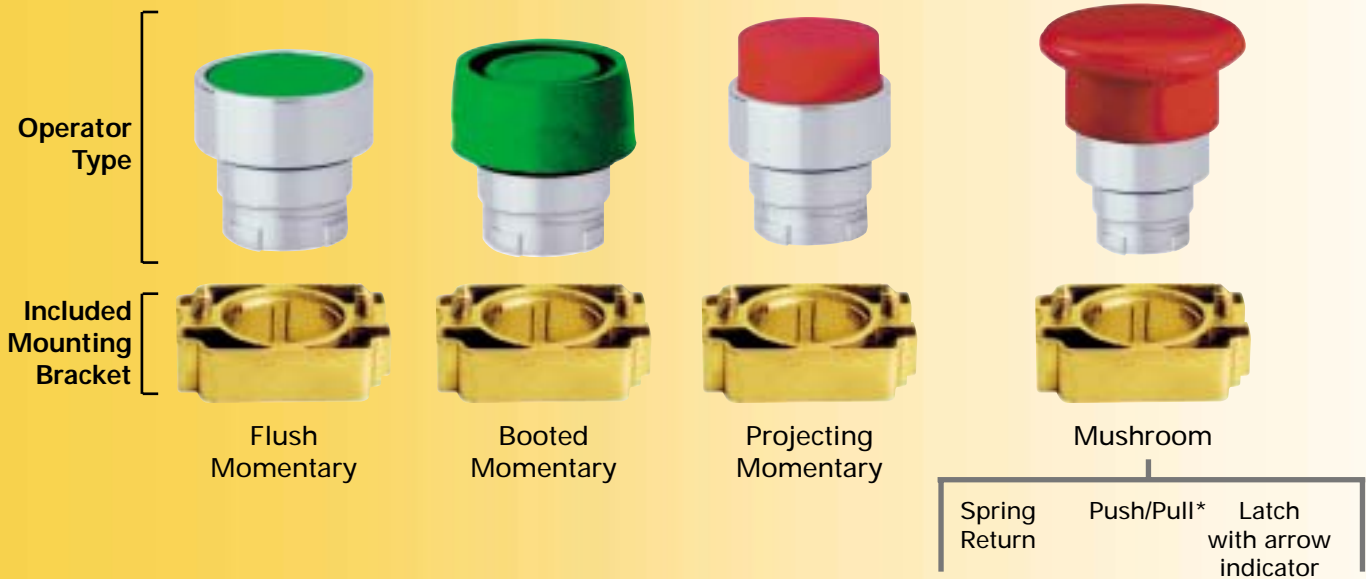


Altech Corp. can provide other push button and actuator options. If your requirement calls for a 22 mm operator which is not shown, please do not hesitate to call.



Push buttons

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

For push button and selector switch dimensions see page 7.

*Illuminated available, please contact Altech.



Switch Contacts

- Panel Mount**
- Normally Open Silver S1
 - Normally Closed Silver S2
 - Normally Open Gold S3
 - Normally Closed Gold S4

- Base Mount**
(for use with thermoplastic enclosures listed on page 5)
- Normally Open Silver S5
 - Normally Closed Silver S6
 - Normally Open Gold S7
 - Normally Closed Gold S8



S2 normally closed contact shown.

S1 normally open contact shown.



Notes:
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 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 does not rotate
- Protection against electric shock (unit grounded)
- Aesthetically pleasing
- Heavy duty construction
- Shrouded terminals
- Very good flame resistance
- Use of LEDs for long life and minimum maintenance

Actuators

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

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.

Fixing

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:

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

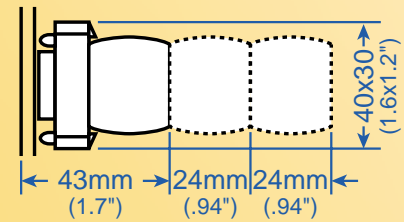
minimum 1 x 0.5 mm² (20 AWG), maximum 2 x 1.5² mm² (2x16 AWG) or 1 x 2.5 mm² (1x14 AWG)

1-2 for NC, 3-4 for NO

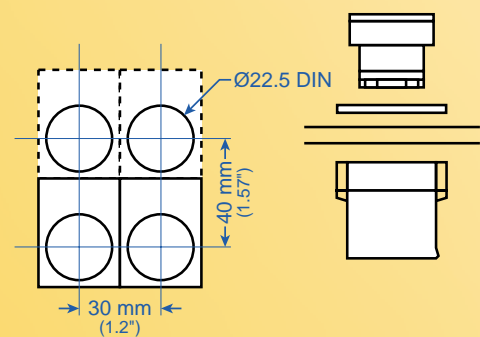
10A cartridge fuse HRC type, rated for resistive loading

Over 1 million operations

	AC 15	V	24	120	230		DC 13	V	24	110
	A	5	4	3	3		A	0.5	0.2	



Fixing Arrangement



30 mm Push Buttons



Flush
Non Illuminated
Momentary



Flush
Illuminated
Momentary



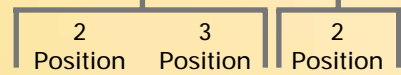
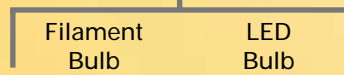
Booted
Momentary



Projecting
Momentary



Selector
Maintained
Momentary



Color	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.
White	AF1	ALF1-XXX	ALF1LB-XXX	AB1	AP1	AS2-2P	AS2-3P	AS2-2PSR
Black	AF2			AB2	AP2			
Green	AF3	ALF3-XXX	ALF3LB-XXX	AB3	AP3			
Red	AF4	ALF4-XXX	ALF4LB-XXX	AB4	AP4			
Amber		ALF5-XXX	ALF5LB-XXX					
Blue	AF6	ALF6-XXX	ALF6LB-XXX	AB6	AP6			
Clear*		ALF7-XXX	ALF7LB-XXX*					
Yellow	AF8	ALF8-XXX	ALF8LB-XXX	AB8	AP8			

* ALF7LB-XXX supplied with yellow LED

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

Voltage Codes	
024	= 24V AC/DC
048	= 48V AC/DC
110	= 110V AC/DC
230	= 230V AC/DC



Certified for type 4X, 12 environment.

Note:
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.



See diagram below.



S11

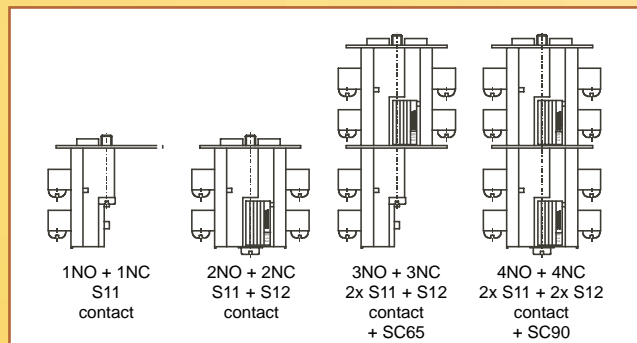
S12

30 mm Contact Elements

Description	Cat. No.
1 Normally Open + 1 Normally Closed Silver Contacts	S11
2 Normally Open + 2 Normally Closed Silver Contacts	S11 + S12

For additional contacts, see diagram at right.

Contact Installation Screws		
Type	Dimensions	Used with
SC25	M4 x 25 mm	S11
SC45	M4 x 45 mm	S12, S11 + S12
SC65	M4 x 65 mm	2x S11 + S12
SC90	M4 x 90 mm	2x S11 + 2x S12



30 mm Push Buttons



Mushroom with Key



Mushroom with Indicating Arrows

Press to Lock,
Turn to Release



Mushroom Momentary



Key

Press to Lock, Key to Release Key to Lock, Key to Release

Cat. No.

Cat. No.

Cat. No.

Cat. No.

Cat. No.

■ AMLKB2

■ AMKB2

■ AML2

□ AM1

■ AM2

■ AK2-XXXXX

■ AMLKB4

■ AMKB4

■ AML4

■ AM3

■ AM4

■ AM6

■ AM8

Characteristics

Environment

Ambient Temperature	Storage	deg C	-25 to +70
Degrees of Protection	Conforming to IEC 529		IP65
Mechanical Life in millions of operating cycles	All push buttons except maintained mushroom		1
	maintained mushroom		0.3

Mechanical Characteristics of contact elements

Contact Operation	NC+NO	Double break, self wiping
Rated Insulation Voltage	500 V AC	
Operating Travel	Push buttons	Changing NC state 2.4mm Changing NO state 4.3mm Travel 8.7mm
Terminal Capacity	Cablings	2x1.5 sq.mm (2x16 AWG) or 1x2.5 sq.mm (14 AWG)
Contact Material	Bimetal (Cu/Ag)	Standard single element
Short Circuit Protection	Conforming to IS6875-II	10A HRC fuse
Rated Make Break	UL508, A600 Q600, ratings	standard block with screw clamp terminals 415V, 10A standard block with screw clamp terminals 220V, 2A
Dielectric Strength	Push Buttons, Pilot Lights	2500V for 1 minute

A K 2 - [] [] [] [] [] []

Function Codes

Ser. No.	Function
2PB	Maintained
2POSR	Momentary
2PI	Maintained
2PO	Maintained
3PB	Maintained
3PC	Maintained

Key Removal

Function
Both Positions
Left Position
Right Position
Left Position
Left and Right Position
Center Position



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.



Pilot Lights

Color

Filament Cat. No.

LED Cat. No.

— [X] [X] [X]

- White
- Green
- Red
- Amber
- Blue
- Clear
- Yellow

- PLB1-XXX
- PLB3-XXX
- PLB4-XXX
- PLB5-XXX
- PLB6-XXX
- PLB7-XXX
- PLB8-XXX

- PLB1LB-XXX
- PLB3LB-XXX
- PLB4LB-XXX
- PLB5LB-XXX
- PLB6LB-XXX
- PLB7LB-XXX*
- PLB8LB-XXX

Voltage Codes

024	= 24VAC/DC
048	= 48VAC/DC
110	= 110VAC/DC
230	= 230VAC/DC

* supplied with yellow LED