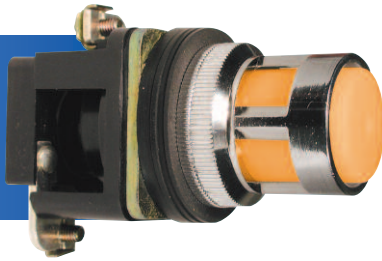


30mm Illuminated Metal Operators



Certified for
NEMA Type 4X
12 environment.

Flush Illuminated Momentary



Note:
All LED illuminated actuators and pilot lights at a specified voltage will operate on AC and DC.
Except for 110V and 230V specify AC or DC type.



Replacement bulbs
available.
See page 54.



Color	Voltage	Cat No.
24V AC/DC (filament bulb)		
<input type="checkbox"/> White	24V AC/DC	ALF1-024
<input checked="" type="checkbox"/> Green	24V AC/DC	ALF3-024
<input checked="" type="checkbox"/> Red	24V AC/DC	ALF4-024
<input checked="" type="checkbox"/> Amber	24V AC/DC	ALF5-024
<input checked="" type="checkbox"/> Blue	24V AC/DC	ALF6-024
<input type="checkbox"/> Clear	24V AC/DC	ALF7-024
<input checked="" type="checkbox"/> Yellow	24V AC/DC	ALF8-024
48V AC/DC (filament bulb)		
<input type="checkbox"/> White	48V AC/DC	ALF1-048
<input checked="" type="checkbox"/> Green	48V AC/DC	ALF3-048
<input checked="" type="checkbox"/> Red	48V AC/DC	ALF4-048
<input checked="" type="checkbox"/> Amber	48V AC/DC	ALF5-048
<input checked="" type="checkbox"/> Blue	48V AC/DC	ALF6-048
<input type="checkbox"/> Clear	48V AC/DC	ALF7-048
<input checked="" type="checkbox"/> Yellow	48V AC/DC	ALF8-048
110V AC/DC (filament bulb)		
<input type="checkbox"/> White	110V AC/DC	ALF1-110
<input checked="" type="checkbox"/> Green	110V AC/DC	ALF3-110
<input checked="" type="checkbox"/> Red	110V AC/DC	ALF4-110
<input checked="" type="checkbox"/> Amber	110V AC/DC	ALF5-110
<input checked="" type="checkbox"/> Blue	110V AC/DC	ALF6-110
<input type="checkbox"/> Clear	110V AC/DC	ALF7-110
<input checked="" type="checkbox"/> Yellow	110V AC/DC	ALF8-110
230V AC (filament bulb)		
<input type="checkbox"/> White	230V AC	ALF1-230
<input checked="" type="checkbox"/> Green	230V AC	ALF3-230
<input checked="" type="checkbox"/> Red	230V AC	ALF4-230
<input checked="" type="checkbox"/> Amber	230V AC	ALF5-230
<input checked="" type="checkbox"/> Blue	230V AC	ALF6-230
<input type="checkbox"/> Clear	230V AC	ALF7-230
<input checked="" type="checkbox"/> Yellow	230V AC	ALF8-230
<i>230V DC version is available on request.</i>		
24V AC/DC (LED bulb)		
<input type="checkbox"/> White	24V AC/DC	ALF1LB-024
<input checked="" type="checkbox"/> Green	24V AC/DC	ALF3LB-024
<input checked="" type="checkbox"/> Red	24V AC/DC	ALF4LB-024
<input checked="" type="checkbox"/> Amber	24V AC/DC	ALF5LB-024
<input checked="" type="checkbox"/> Blue	24V AC/DC	ALF6LB-024
<input type="checkbox"/> Clear	24V AC/DC	ALF7LB-024
<input checked="" type="checkbox"/> Yellow	24V AC/DC	ALF8LB-024
48V AC/DC (LED bulb)		
<input type="checkbox"/> White	48V AC/DC	ALF1LB-048
<input checked="" type="checkbox"/> Green	48V AC/DC	ALF3LB-048
<input checked="" type="checkbox"/> Red	48V AC/DC	ALF4LB-048
<input checked="" type="checkbox"/> Amber	48V AC/DC	ALF5LB-048
<input checked="" type="checkbox"/> Blue	48V AC/DC	ALF6LB-048
<input type="checkbox"/> Clear	48V AC/DC	ALF7LB-048
<input checked="" type="checkbox"/> Yellow	48V AC/DC	ALF8LB-048
110V AC* (LED bulb)		
<input type="checkbox"/> White	110V AC*	ALF1LB-110
<input checked="" type="checkbox"/> Green	110V AC*	ALF3LB-110
<input checked="" type="checkbox"/> Red	110V AC*	ALF4LB-110
<input checked="" type="checkbox"/> Amber	110V AC*	ALF5LB-110
<input checked="" type="checkbox"/> Blue	110V AC*	ALF6LB-110
<input type="checkbox"/> Clear	110V AC*	ALF7LB-110
<input checked="" type="checkbox"/> Yellow	110V AC*	ALF8LB-110
230V AC* (LED bulb)		
<input type="checkbox"/> White	230V AC*	ALF1LB-230
<input checked="" type="checkbox"/> Green	230V AC*	ALF3LB-230
<input checked="" type="checkbox"/> Red	230V AC*	ALF4LB-230
<input checked="" type="checkbox"/> Amber	230V AC*	ALF5LB-230
<input checked="" type="checkbox"/> Blue	230V AC*	ALF6LB-230
<input type="checkbox"/> Clear	230V AC*	ALF7LB-230
<input checked="" type="checkbox"/> Yellow	230V AC*	ALF8LB-230

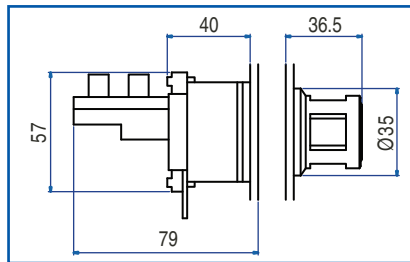
*110V DC and 230V DC version is available on request.

30mm Illuminated Metal Operators

Dimensional Drawings

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

Flush Illuminated Momentary



Contact Elements

Description

1 Normally Open + 1 Normally Closed
Silver Contacts

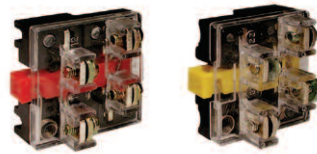
Cat. No.

S11

2 Normally Open + 2 Normally Closed
Silver Contacts

S11 + S12

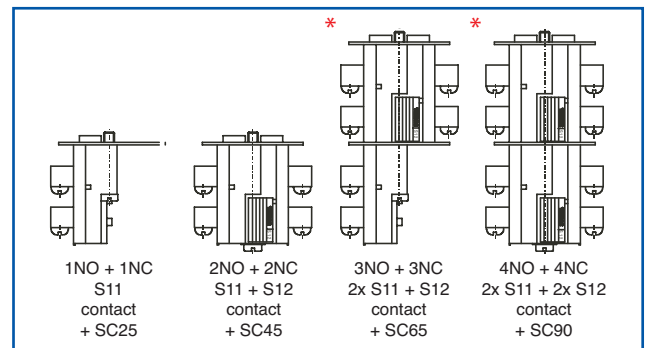
For additional contacts, see diagram at right.



Contact Installation Screws

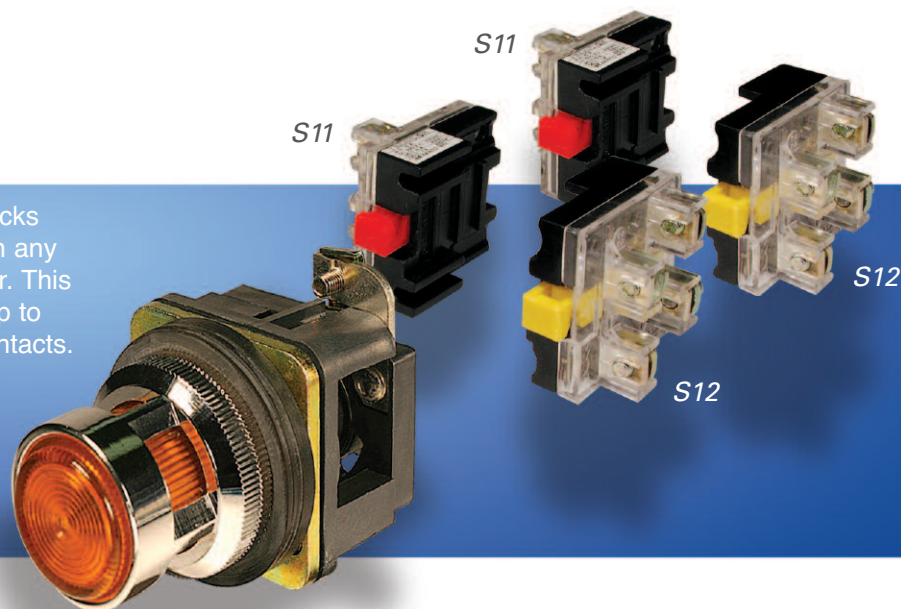
Type	Dimensions	Used with
SC25	M4 x 25 mm	S11
SC45	M4 x 45 mm	S11 + S12
SC65	M4 x 65 mm	2x S11 + S12
SC90	M4 x 90 mm	2x S11 + 2x S12

* When using more than two contact blocks, additional screws must be purchased separately (SC45 and SC90).



Exploded Assembly View

Up to 4 contact blocks may be installed on any Illuminated actuator. This will give the user up to 2 NO and 2 NC contacts.



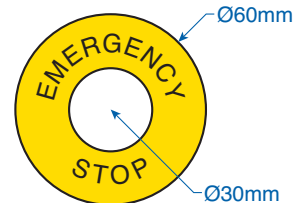
30mm Push Button Accessories



Metal legend plates are engraved in horizontal and vertical orientations, one per side.



EMERGENCY STOP
LP41
Legend plate Ø 60mm
yellow with black text.



Title	Cat No.
AUTO	LP09
CLOSE	LP08
DOWN	LP07
EMERGENCY STOP	LP41
FAST	LP12
HAND	LP10
HAND, O, AUTO	LP36
INCH	LP14
LEFT	LP18
OFF	LP16
ON	LP15
OPEN	LP07

Title	Cat No.
OVER	LP74
POWER ON	LP20
RESET	LP13
REVERSE	LP04
RIGHT	LP17
RUN	LP24
SLOW	LP11
START	LP01
STOP	LP02
TRIP	LP19
UNDER LOAD	LP108

Replacement Bulbs



Filament Bulbs

Color	Voltage	Cat No.
<input type="checkbox"/> Clear	12V AC/DC	BA15D12
<input type="checkbox"/> Clear	24V AC/DC	BA15D24
<input type="checkbox"/> Clear	48V AC/DC	BA15D48
<input type="checkbox"/> Clear	110V AC/DC	BA15D110
<input type="checkbox"/> Clear	230V AC/DC	BA15D220

LED Bulbs

Color	Voltage	Cat No.
<input type="checkbox"/> White	12V AC/DC	MCB15112
<input checked="" type="checkbox"/> Green	12V AC/DC	MCB15312
<input checked="" type="checkbox"/> Red	12V AC/DC	MCB15412
<input checked="" type="checkbox"/> Amber	12V AC/DC	MCB15512
<input checked="" type="checkbox"/> Blue	12V AC/DC	MCB15612
<input checked="" type="checkbox"/> Yellow	12V AC/DC	MCB15812

LED Bulbs

Color	Voltage	Cat No.	Color	Voltage	Cat No.
<input type="checkbox"/> White	110V AC	MCB151110	<input type="checkbox"/> White	230V AC	MCB151230
<input checked="" type="checkbox"/> Green	110V AC	MCB153110	<input checked="" type="checkbox"/> Green	230V AC	MCB153230
<input checked="" type="checkbox"/> Red	110V AC	MCB154110	<input checked="" type="checkbox"/> Red	230V AC	MCB154230
<input checked="" type="checkbox"/> Amber	110V AC	MCB155110	<input checked="" type="checkbox"/> Amber	230V AC	MCB155230
<input checked="" type="checkbox"/> Blue	110V AC	MCB156110	<input checked="" type="checkbox"/> Blue	230V AC	MCB156230
<input checked="" type="checkbox"/> Yellow	110V AC	MCB158110	<input checked="" type="checkbox"/> Yellow	230V AC	MCB158230
<input type="checkbox"/> White	110V DC	MCB151110D	<input type="checkbox"/> White	230V DC	MCB151230D
<input checked="" type="checkbox"/> Green	110V DC	MCB153110D	<input checked="" type="checkbox"/> Green	230V DC	MCB153230D
<input checked="" type="checkbox"/> Red	110V DC	MCB154110D	<input checked="" type="checkbox"/> Red	230V DC	MCB154230D
<input checked="" type="checkbox"/> Amber	110V DC	MCB155110D	<input checked="" type="checkbox"/> Amber	230V DC	MCB155230D
<input checked="" type="checkbox"/> Blue	110V DC	MCB156110D	<input checked="" type="checkbox"/> Blue	230V DC	MCB156230D
<input checked="" type="checkbox"/> Yellow	110V DC	MCB158110D	<input checked="" type="checkbox"/> Yellow	230V DC	MCB158230D
<input type="checkbox"/> White	24V AC/DC	MCB15124	<input type="checkbox"/> White	48V AC/DC	MCB15148
<input checked="" type="checkbox"/> Green	24V AC/DC	MCB15324	<input checked="" type="checkbox"/> Green	48V AC/DC	MCB15348
<input checked="" type="checkbox"/> Red	24V AC/DC	MCB15424	<input checked="" type="checkbox"/> Red	48V AC/DC	MCB15448
<input checked="" type="checkbox"/> Amber	24V AC/DC	MCB15524	<input checked="" type="checkbox"/> Amber	48V AC/DC	MCB15548
<input checked="" type="checkbox"/> Blue	24V AC/DC	MCB15624	<input checked="" type="checkbox"/> Blue	48V AC/DC	MCB15648
<input checked="" type="checkbox"/> Yellow	24V AC/DC	MCB15824	<input checked="" type="checkbox"/> Yellow	48V AC/DC	MCB15848

Maximum Power Consumption:

LED			FILAMENT BULBS	
Supply Voltage	Power (max) in Watts	Current	Power (max) in Watts	Current
12V	0.5W	max 20mA	2W	max 166mA
24V	0.5W	max 20mA	2W	max 85mA
48V	0.5W	max 20mA	5W	max 105mA
110V	0.5W	max 20mA	5W	max 45mA
240V	1W	max 20mA	6W	max 25mA

These bulbs are available in various colors and voltages. LED based bulbs are a direct replacement for filament bulbs and do not require having to change any other components in your existing operator or pilot light.

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, therefore no damage to the body of the lamp or any operator in case of illuminated push buttons occurs.

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.

30mm Technical Notes

Characteristics

Environment

Temperature Range	-25°C to +70°C (-13°F to +158°F)	
Degree of protection:	IEC 529 UL50	IP65 NEMA Type 4X, 12
Mechanical Life	All push buttons except maintained mushroom maintained mushroom	1 million of cycles 0.3 million of cycles

Mechanical Characteristics of contact elements

Contact Operation	NO+NC	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	Wiring	2x1.5 sq.mm (2x16 AWG) or 1x2.5 sq.mm (14 AWG)
Contact Material	Bimetal (Cu/Ag)	Standard single element
Short Circuit Protection		10A HRC fuse
Rated Make Break	UL508, AC: A600; 600V, 1.2A DC: Q600; 600V, 0.1A	standard block with screw clamp terminals 415V AC, 4A standard block with screw clamp terminals 220V AC, 0.5A
Dielectric Strength	Push Buttons, Pilot Lights	2500V for 1 minute