

Table of Contents

22mm Push Buttons

Introduction - **4-5**



22mm Non-Illuminated Metal Operators **6-7**



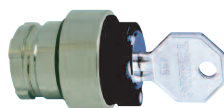
22mm Non-Illuminated Mushroom Metal Operators **8-11**



22mm LED Illuminated Mushroom Metal Operators **12-13**



22mm Twin Touch Non-Illuminated and LED Illuminated Metal Operators **14-15**



22mm Non-Illuminated Metal Selector Switch Operators **16-17**



22mm LED Illuminated Metal Selector Switches **18-19**



22mm LED Illuminated Projecting Metal Operator **20-21**



22mm LED Illuminated Flush Metal Operators **22-23**



22mm LED Metal Pilot Lights **24**

22mm Specifications - **25**



Economy Non-Illuminated Plastic Push Buttons **26-27**



Unibody LED Illuminated Plastic Pilot Lights **28-29**



22mm Plastic Enclosures, Control Boxes & Installation Instructions **30-35**



22mm Aluminum Enclosures **36-37**



22mm Push Button Accessories & Switch Contacts **38-41**



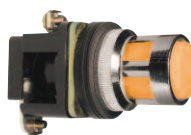
Pre-assembled or Ready to Assemble Control Stations **42-43**

30mm Metal Push Buttons

Introduction - **44**



30mm Non-Illuminated Metal Operators **44-45**



30mm LED Illuminated Metal Operators **46-47**



30mm Non-Illuminated Metal Selector Switches **48-49**



30mm Non-Illuminated Mushroom Metal Operators **50-51**



30mm Metal Pilot Lights **52**



30mm Aluminum Enclosures **53**



30mm Push Button Accessories, Contact Blocks & Technical Notes **54-56**

Index - **57-60**

Terms and Conditions - **62**

22 and 30 mm Altech Metal Push Buttons



Part No. PBD

Quality at a Competitive Price!

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.



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.



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.



30mm Metal Push Buttons

The Altech 30mm Push Button line include a complete selection of push buttons, pilot lights and selector switches and accessories. All properly assembled devices are UL and CE Recognized and they certified for NEMA type 4X applications. An internal seal provides watertight integrity and all components are corrosion resistant materials.

Our contact blocks are color coded for an easy assembly and identification (Red=S11, Yellow=S12). Illuminated or Non-Illuminated push buttons in various colors are available for quick delivery.

Selector Switches are available in a 2 or 3 position styles with and option for momentary or maintained function. The pilot lights are full voltage and LED and filament bubs are interchangeable.

Cast aluminum control stations are available to your specifications.

These Ø 30 control devices can be mounted in any position in panels of 1 to 6 mm (.039 - .236 in.) thickness.

30mm Non-Illuminated Metal Operators



Certified for
NEMA Type 4X
12 environment.

Flush Non-Illuminated Momentary



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

Booted Momentary



Color	Function	Cat No.
☐ White	Momentary	AB1
☐ Black	Momentary	AB2
☐ Green	Momentary	AB3
☐ Red	Momentary	AB4
☐ Blue	Momentary	AB6
☐ Yellow	Momentary	AB8

Projecting Momentary



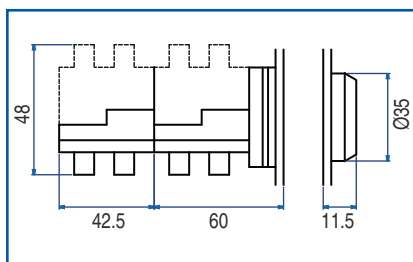
Color	Function	Cat No.
☐ White	Momentary	AP1
☐ Black	Momentary	AP2
☐ Green	Momentary	AP3
☐ Red	Momentary	AP4
☐ Blue	Momentary	AP6
☐ Yellow	Momentary	AP8

30mm Non-Illuminated Metal Operators

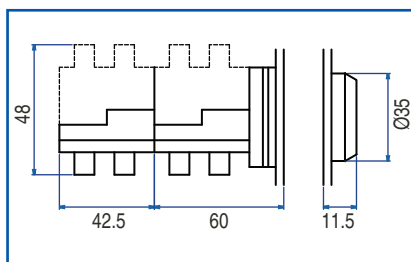
Dimensional Drawings

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

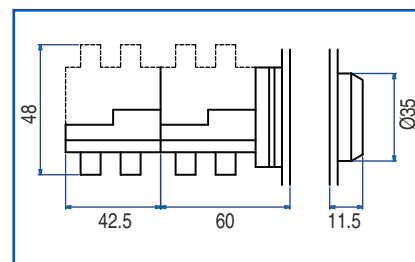
Flush Momentary



Booted Momentary



Projecting Momentary



Contact Elements

Description

1 Normally Open + 1 Normally Closed
Silver Contacts

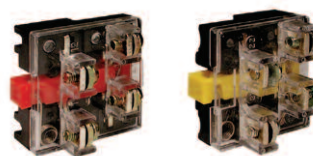
Cat. No.

S11

2 Normally Open + 2 Normally Closed
Silver Contacts

S11 + S12

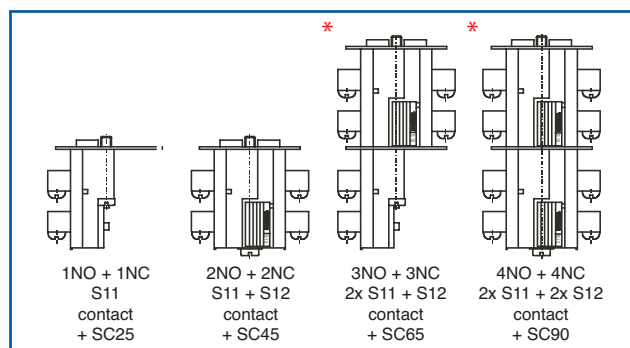
For additional contacts, see diagram at right.



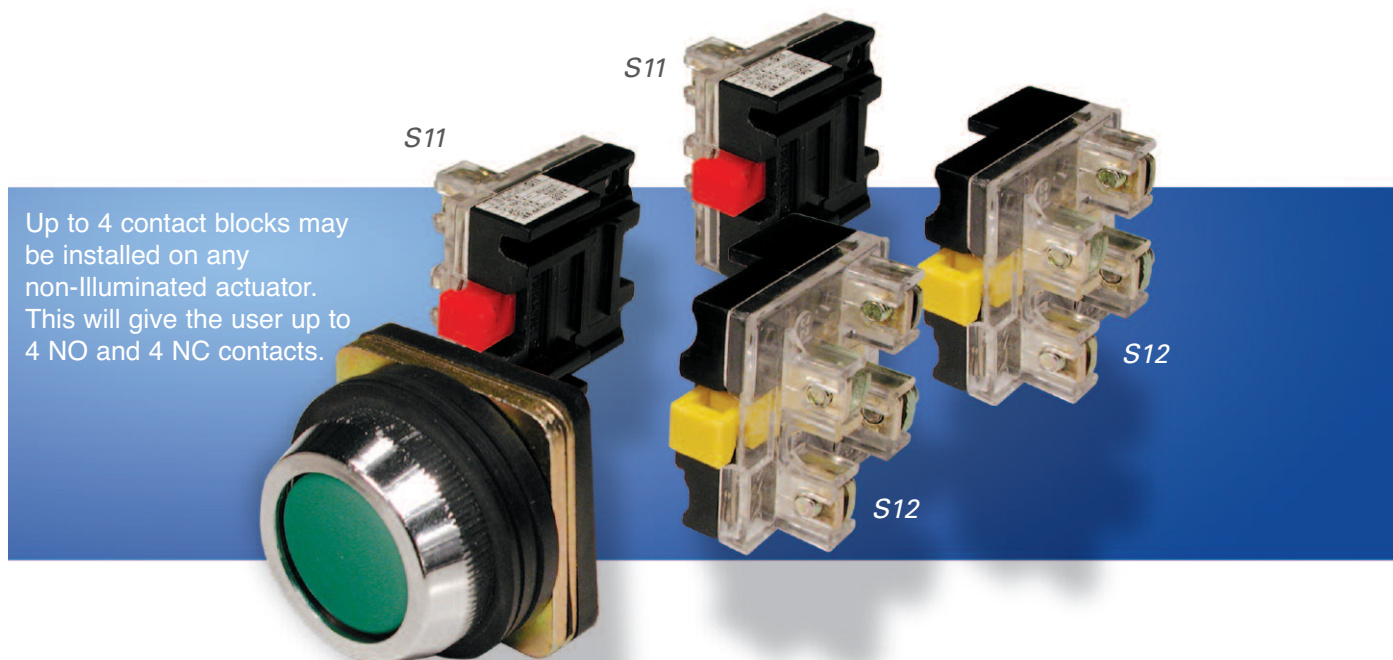
Contact Installation Screws

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 non-illuminated actuator. This will give the user up to 4 NO and 4 NC contacts.

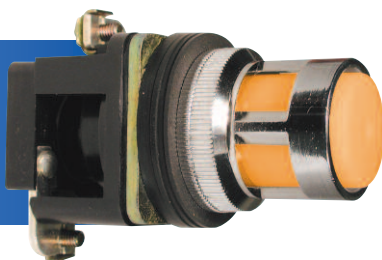
30mm Illuminated Metal Operators

UL
C US
E225660



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)

White	24V AC/DC	ALF1-024
Green	24V AC/DC	ALF3-024
Red	24V AC/DC	ALF4-024
Amber	24V AC/DC	ALF5-024
Blue	24V AC/DC	ALF6-024
Clear	24V AC/DC	ALF7-024
Yellow	24V AC/DC	ALF8-024

48V AC/DC (filament bulb)

White	48V AC/DC	ALF1-048
Green	48V AC/DC	ALF3-048
Red	48V AC/DC	ALF4-048
Amber	48V AC/DC	ALF5-048
Blue	48V AC/DC	ALF6-048
Clear	48V AC/DC	ALF7-048
Yellow	48V AC/DC	ALF8-048

110V AC/DC (filament bulb)

White	110V AC/DC	ALF1-110
Green	110V AC/DC	ALF3-110
Red	110V AC/DC	ALF4-110
Amber	110V AC/DC	ALF5-110
Blue	110V AC/DC	ALF6-110
Clear	110V AC/DC	ALF7-110
Yellow	110V AC/DC	ALF8-110

230V AC (filament bulb)

White	230V AC	ALF1-230
Green	230V AC	ALF3-230
Red	230V AC	ALF4-230
Amber	230V AC	ALF5-230
Blue	230V AC	ALF6-230
Clear	230V AC	ALF7-230
Yellow	230V AC	ALF8-230

230V DC version is available on request.

24V AC/DC (LED bulb)

White	24V AC/DC	ALF1LB-024
Green	24V AC/DC	ALF3LB-024
Red	24V AC/DC	ALF4LB-024
Amber	24V AC/DC	ALF5LB-024
Blue	24V AC/DC	ALF6LB-024
Clear	24V AC/DC	ALF7LB-024
Yellow	24V AC/DC	ALF8LB-024

48V AC/DC (LED bulb)

White	48V AC/DC	ALF1LB-048
Green	48V AC/DC	ALF3LB-048
Red	48V AC/DC	ALF4LB-048
Amber	48V AC/DC	ALF5LB-048
Blue	48V AC/DC	ALF6LB-048
Clear	48V AC/DC	ALF7LB-048
Yellow	48V AC/DC	ALF8LB-048

110V AC* (LED bulb)

White	110V AC*	ALF1LB-110
Green	110V AC*	ALF3LB-110
Red	110V AC*	ALF4LB-110
Amber	110V AC*	ALF5LB-110
Blue	110V AC*	ALF6LB-110
Clear	110V AC*	ALF7LB-110
Yellow	110V AC*	ALF8LB-110

230V AC* (LED bulb)

White	230V AC*	ALF1LB-230
Green	230V AC*	ALF3LB-230
Red	230V AC*	ALF4LB-230
Amber	230V AC*	ALF5LB-230
Blue	230V AC*	ALF6LB-230
Clear	230V AC*	ALF7LB-230
Yellow	230V AC*	ALF8LB-230

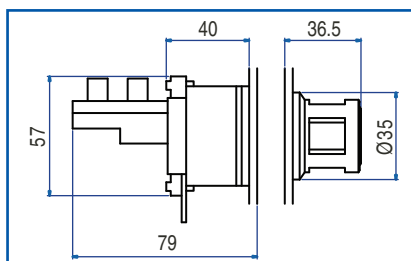
*110V DC and 230V DC version is available on request.

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

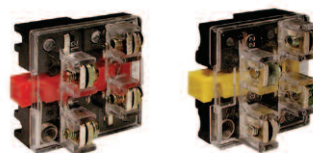
Cat. No.

S11

2 Normally Open + 2 Normally Closed
Silver Contacts

S11 + S12

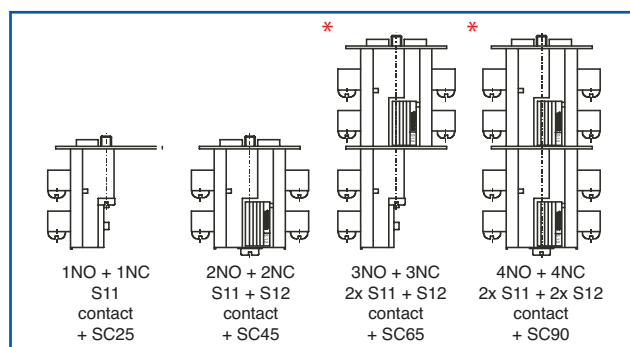
For additional contacts, see diagram at right.



Contact Installation Screws

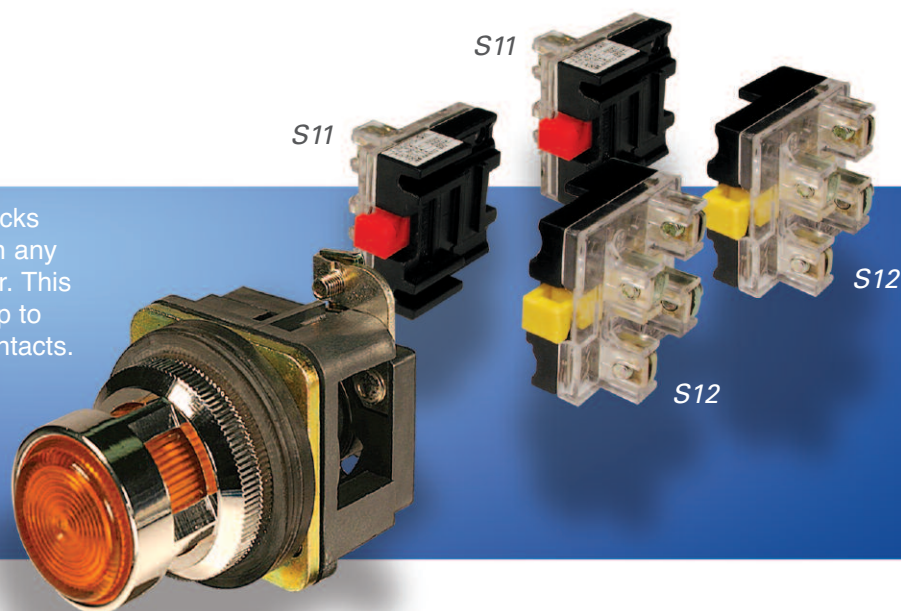
Type	Dimensions	Used with
SC25	M4 x 25 mm	S11
SC45	M4 x 45 mm	S11 + S12
SC65	M4 x 65 mm	2x S11 + S12
SC90	M4 x 90 mm	2x S11 + 2x S12

* 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 Selector Switch Metal Operators



Certified for
NEMA Type 4X
12 environment.

Selector Maintained & Momentary



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

Color

Cat No.

2 Position Maintained

■ Black	AS2-2P
---------	--------

3 Position Maintained

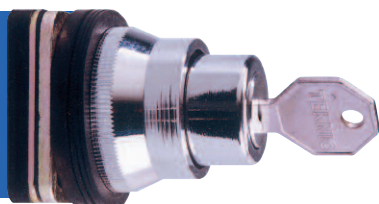
■ Black	AS2-3P
---------	--------

2 Position Momentary

■ Black	AS2-2PSR
---------	----------

Key Selector Switch

Keyed Alike



To be used for applications where single or multiple operators are used, but the same key configurations are required. Standard key selector switches have the same key configuration (Cat. No. KY30).

Function

Key Removal

Cat No.

2 Position

Maintained	↙	Left/Right	AK2-2PB
Momentary	↘	Left	AK2-2POSR
Maintained	↙	Right	AK2-2PI
Maintained	↘	Left	AK2-2PO

3 Position

Maintained	↙↘	Left/Right	AK2-3PB
Maintained	↙	Center	AK2-3PC

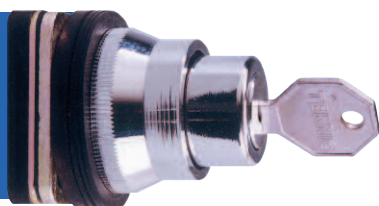


Replacement Key

KY30

Key Selector Switch

Keyed Differently



To be used for applications where multiple operators are used, but different key configurations are required. Each cat. no. have different key configurations.

Function

Key Removal

Cat No.

2 Position

Maintained	↙	Left	AK2-2PO-KD
Momentary	↘	Left	AK2-2PO-KD1
Maintained	↙	Left	AK2-2PO-KD2
Maintained	↙	Left	AK2-2PO-KD4
Maintained	↙	Left	AK2-2PO-KD5

3 Position

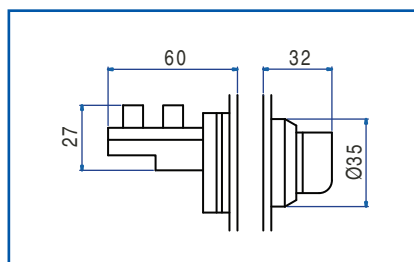
Maintained	↙↘	Center	AK2-3PC-KD
Maintained	↙↘	Center	AK2-3PC-KD1
Maintained	↙↘	Center	AK2-3PC-KD2
Maintained	↙↘	Center	AK2-3PC-KD3

30mm Selector Switch Metal Operators

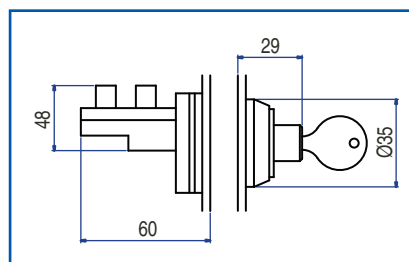
Dimensional Drawings

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

Flush Maintained and Momentary



Key Selector



Contact Elements

Description

Cat. No.

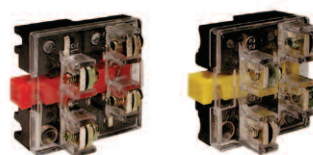
1 Normally Open + 1 Normally Closed
Silver Contacts

S11

2 Normally Open + 2 Normally Closed
Silver Contacts

S11 + S12

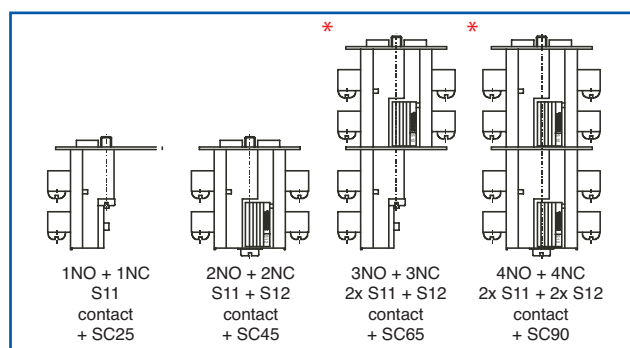
For additional contacts, see diagram at right.



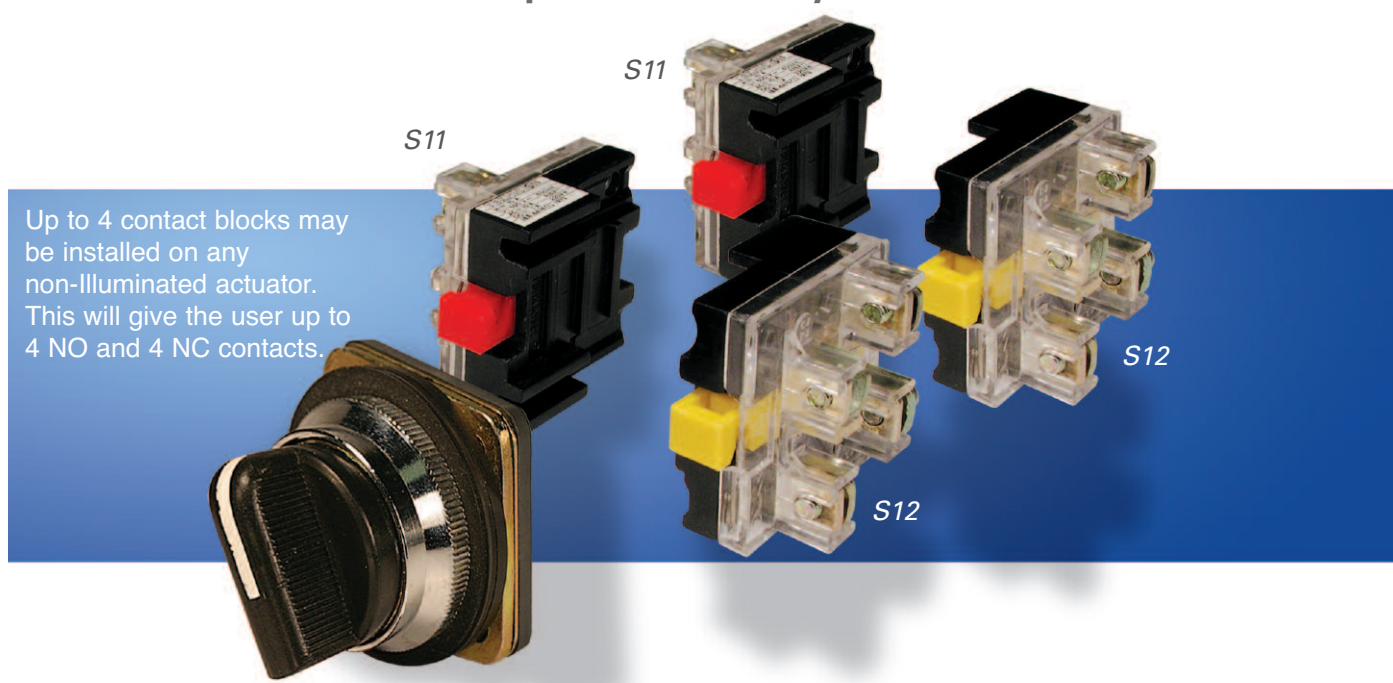
Contact Installation Screws

Type	Dimensions	Used with
SC25	M4 x 25 mm	S11
SC45	M4 x 45 mm	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 non-illuminated actuator. This will give the user up to 4 NO and 4 NC contacts.

30mm Non-Illuminated Metal Operators

UL
C US
E225660



Certified for
NEMA Type 4X
12 environment.

Mushroom with Key



All keys are “keyed alike”. Different keys are available on request.

Other colors are available on request.

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

Press to Lock, Key to Release

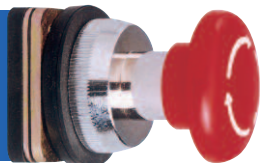
■ Black	Maintained	AMLKB2
■ Red	Maintained	AMLKB4

Key to Lock, Key to Release

■ Black	Maintained	AMKB2
■ Red	Maintained	AMKB4

Mushroom with Indicating Arrows

(Press to lock, turn to release.)



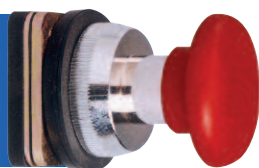
Other colors are available on request.

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

Press to Lock, Turn to Release

■ Black	Maintained	AML2
■ Red	Maintained	AML4

Mushroom Momentary



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

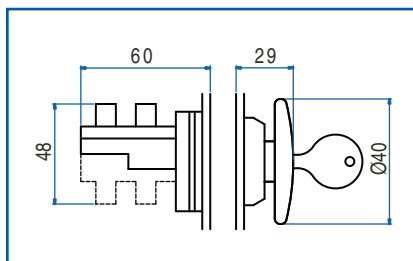
□ White	Momentary	AM1
■ Black	Momentary	AM2
■ Green	Momentary	AM3
■ Red	Momentary	AM4
■ Blue	Momentary	AM6
■ Yellow	Momentary	AM8

30mm Non-Illuminated Metal Operators

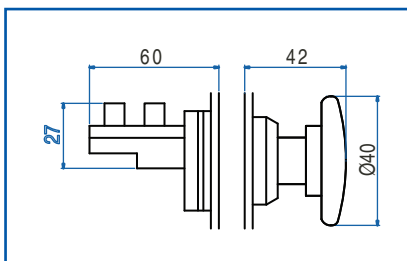
Dimensional Drawings

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

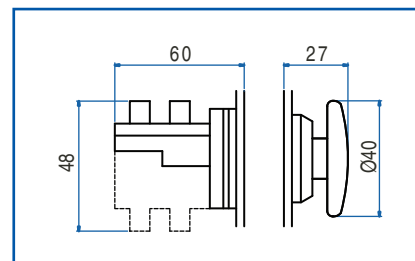
Mushroom with Key



Mushroom with Indicating Arrows



Mushroom Momentary



Contact Elements

Description

1 Normally Open + 1 Normally Closed
Silver Contacts

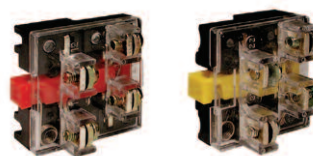
Cat. No.

S11

2 Normally Open + 2 Normally Closed
Silver Contacts

S11 + S12

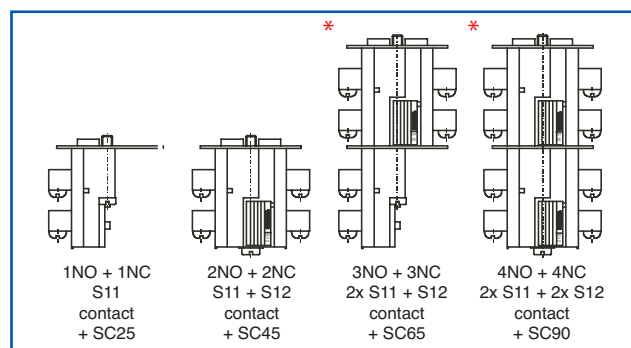
For additional contacts, see diagram at right.



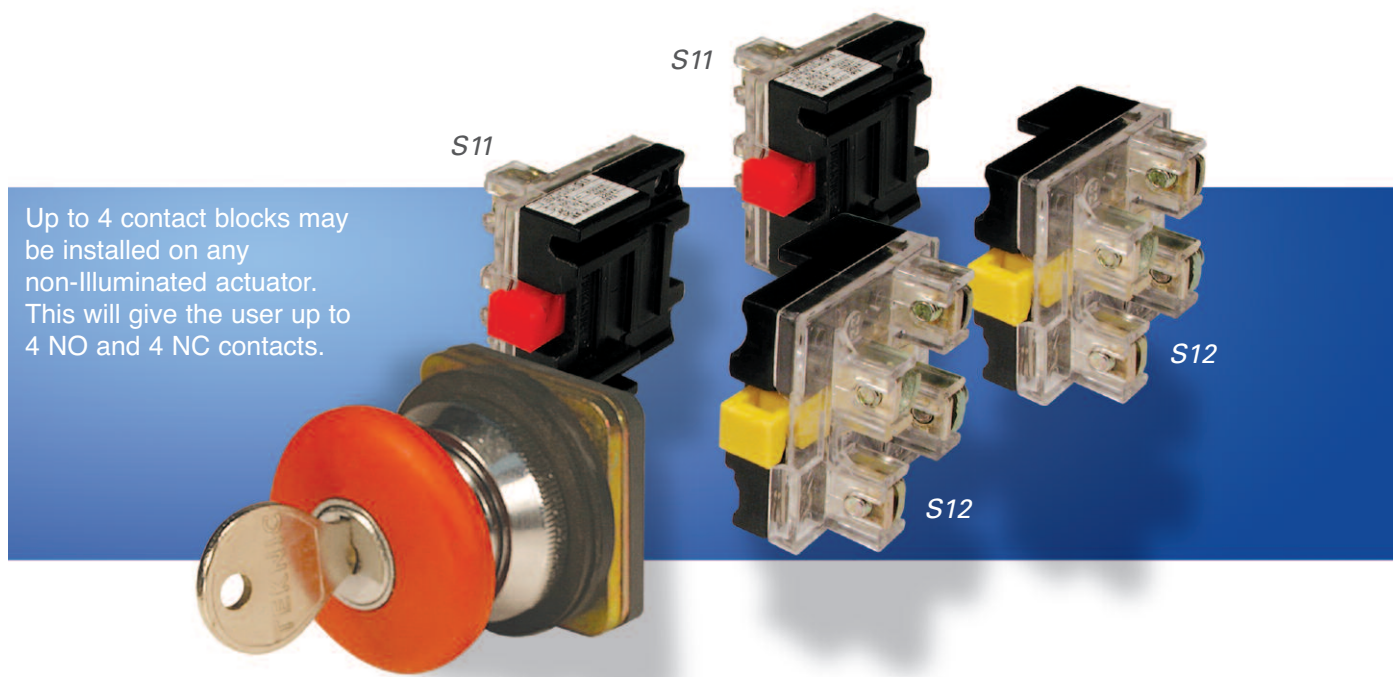
Contact Installation Screws

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 non-illuminated actuator. This will give the user up to 4 NO and 4 NC contacts.

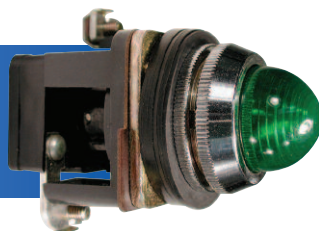
30mm Metal Pilot Lights

UL
C US
E225660



Certified for
NEMA Type 4X
12 environment.

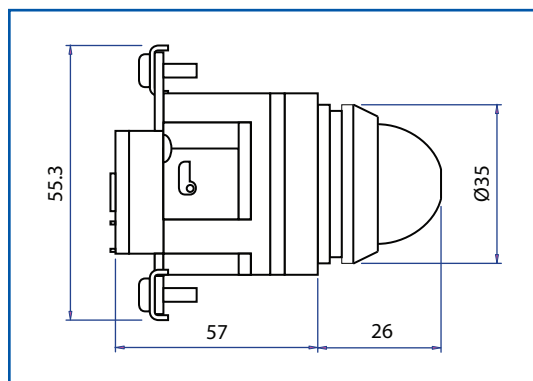
Pilot Light



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

Dimensional Drawings

Pilot Light



Replacement bulbs
available.
See page 54.



Filament Bulb

Color	Voltage	Cat No.
24V AC/DC (filament bulb)		
White	24V AC/DC	PLB1-024
Green	24V AC/DC	PLB3-024
Red	24V AC/DC	PLB4-024
Amber	24V AC/DC	PLB5-024
Blue	24V AC/DC	PLB6-024
Clear	24V AC/DC	PLB7-024
Yellow	24V AC/DC	PLB8-024
48V AC/DC (filament bulb)		
White	48V AC/DC	PLB1-048
Green	48V AC/DC	PLB3-048
Red	48V AC/DC	PLB4-048
Amber	48V AC/DC	PLB5-048
Blue	48V AC/DC	PLB6-048
Clear	48V AC/DC	PLB7-048
Yellow	48V AC/DC	PLB8-048
110V AC/DC (filament bulb)		
White	110V AC/DC	PLB1-110
Green	110V AC/DC	PLB3-110
Red	110V AC/DC	PLB4-110
Amber	110V AC/DC	PLB5-110
Blue	110V AC/DC	PLB6-110
Clear	110V AC/DC	PLB7-110
Yellow	110V AC/DC	PLB8-110
230V AC/DC (filament bulb)		
White	230V AC/DC	PLB1-230
Green	230V AC/DC	PLB3-230
Red	230V AC/DC	PLB4-230
Amber	230V AC/DC	PLB5-230
Blue	230V AC/DC	PLB6-230
Clear	230V AC/DC	PLB7-230
Yellow	230V AC/DC	PLB8-230

LED Bulb

Color	Voltage	Cat No.
24V AC/DC (LED bulb)		
White	24V AC/DC	PLB1LB-024
Green	24V AC/DC	PLB3LB-024
Red	24V AC/DC	PLB4LB-024
Amber	24V AC/DC	PLB5LB-024
Blue	24V AC/DC	PLB6LB-024
Clear	24V AC/DC	PLB7LB-024
Yellow	24V AC/DC	PLB8LB-024
48V AC/DC (LED bulb)		
White	48V AC/DC	PLB1LB-048
Green	48V AC/DC	PLB3LB-048
Red	48V AC/DC	PLB4LB-048
Amber	48V AC/DC	PLB5LB-048
Blue	48V AC/DC	PLB6LB-048
Clear	48V AC/DC	PLB7LB-048
Yellow	48V AC/DC	PLB8LB-048
110V AC* (LED bulb)		
White	110V AC*	PLB1LB-110
Green	110V AC*	PLB3LB-110
Red	110V AC*	PLB4LB-110
Amber	110V AC*	PLB5LB-110
Blue	110V AC*	PLB6LB-110
Clear	110V AC*	PLB7LB-110
Yellow	110V AC*	PLB8LB-110
230V AC* (LED bulb)		
White	230V AC*	PLB1LB-230
Green	230V AC*	PLB3LB-230
Red	230V AC*	PLB4LB-230
Amber	230V AC*	PLB5LB-230
Blue	230V AC*	PLB6LB-230
Clear	230V AC*	PLB7LB-230
Yellow	230V AC*	PLB8LB-230

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

30mm Aluminum Enclosures

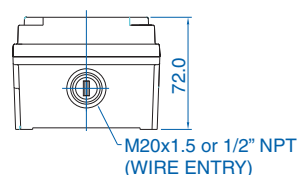
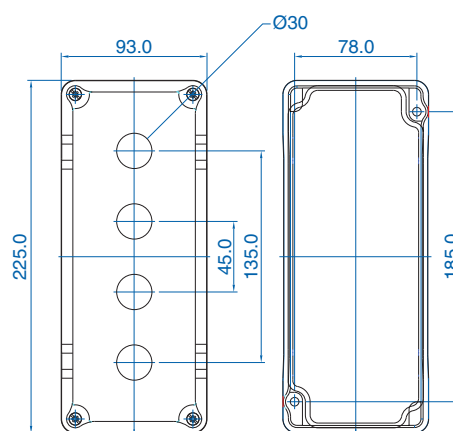
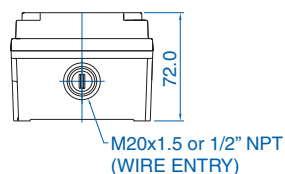
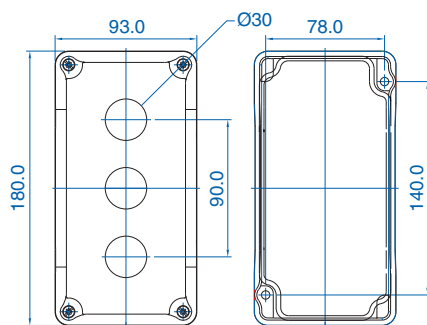
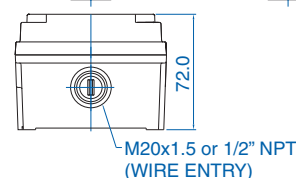
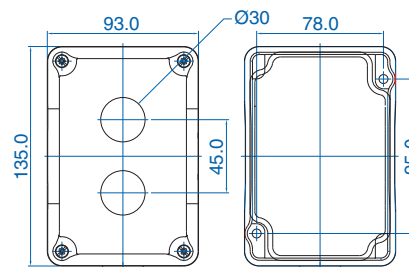
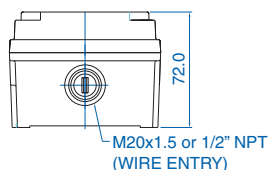
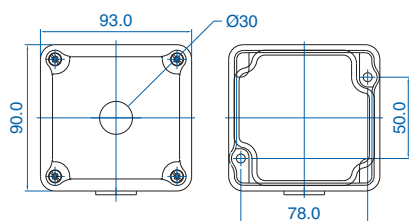


Certified for
NEMA Type 4X
12 environment.

Aluminum Gravity Die Cast



Cat. No.	Operator Capacity	Color Top/ Bottom	Construction	Dimensions (LxWxH) mm (in.)	Cable Entry Size	Mounting Hole Dia.
1003A13	1	Black/Pebble Gray (RAL 7032)	GDC Aluminum	93 x 90x72 (3.66x3.54x2.83)	2xM20	2 X 6mm
1004C13	2	Black/Pebble Gray (RAL 7032)	GDC Aluminum	93x135x72 (3.66x5.32x2.83)	2xM20	2 X 6mm
1005E13	3	Black/Pebble Gray (RAL 7032)	GDC Aluminum	93x180x72 (3.66x7.09x2.83)	2xM20	2 X 6mm
1004G13	4	Black/Pebble Gray (RAL 7032)	GDC Aluminum	93x225x72 (3.66x8.86x2.83)	2xM20	2 X 6mm
1005A13	1	Black/Pebble Gray (RAL 7032)	GDC Aluminum	93 x 90x72 (3.66x3.54x2.83)	2x1/2"-14 NPT	2 X 6mm
1006C13	2	Black/Pebble Gray (RAL 7032)	GDC Aluminum	93x135x72 (3.66x5.32x2.83)	2x1/2"-14 NPT	2 X 6mm
1007E13	3	Black/Pebble Gray (RAL 7032)	GDC Aluminum	93x180x72 (3.66x7.09x2.83)	2x1/2"-14 NPT	2 X 6mm
1006G13	4	Black/Pebble Gray (RAL 7032)	GDC Aluminum	93x225x72 (3.66x8.86x2.83)	2x1/2"-14 NPT	2 X 6mm



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

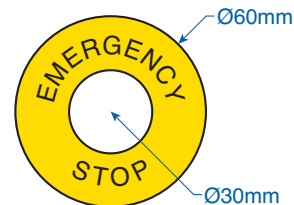
30mm Push Button Accessories



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.
☐ Clear	12V AC/DC	BA15D12
☐ Clear	24V AC/DC	BA15D24
☐ Clear	48V AC/DC	BA15D48
☐ Clear	110V AC/DC	BA15D110
☐ Clear	230V AC/DC	BA15D220

LED Bulbs

Color	Voltage	Cat No.
☐ White	12V AC/DC	MCB15112
☒ Green	12V AC/DC	MCB15312
☒ Red	12V AC/DC	MCB15412
☒ Amber	12V AC/DC	MCB15512
☒ Blue	12V AC/DC	MCB15612
☒ Yellow	12V AC/DC	MCB15812

LED Bulbs

Color	Voltage	Cat No.	Color	Voltage	Cat No.
☐ White	110V AC	MCB151110	☐ White	230V AC	MCB151230
☒ Green	110V AC	MCB153110	☒ Green	230V AC	MCB153230
☒ Red	110V AC	MCB154110	☒ Red	230V AC	MCB154230
☒ Amber	110V AC	MCB155110	☒ Amber	230V AC	MCB155230
☒ Blue	110V AC	MCB156110	☒ Blue	230V AC	MCB156230
☒ Yellow	110V AC	MCB158110	☒ Yellow	230V AC	MCB158230
☐ White	110V DC	MCB151110D	☐ White	230V DC	MCB151230D
☒ Green	110V DC	MCB153110D	☒ Green	230V DC	MCB153230D
☒ Red	110V DC	MCB154110D	☒ Red	230V DC	MCB154230D
☒ Amber	110V DC	MCB155110D	☒ Amber	230V DC	MCB155230D
☒ Blue	110V DC	MCB156110D	☒ Blue	230V DC	MCB156230D
☒ Yellow	110V DC	MCB158110D	☒ Yellow	230V DC	MCB158230D
☐ White	24V AC/DC	MCB15124	☐ White	48V AC/DC	MCB15148
☒ Green	24V AC/DC	MCB15324	☒ Green	48V AC/DC	MCB15348
☒ Red	24V AC/DC	MCB15424	☒ Red	48V AC/DC	MCB15448
☒ Amber	24V AC/DC	MCB15524	☒ Amber	48V AC/DC	MCB15548
☒ Blue	24V AC/DC	MCB15624	☒ Blue	48V AC/DC	MCB15648
☒ Yellow	24V AC/DC	MCB15824	☒ 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 Push Button Accessories

Lenses and Replacement Boots

Lenses for pilot lights

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

Lenses for illuminated actuators

Color	Cat No.
White	ALL1
Green	ALL3
Red	ALL4
Amber	ALL5
Blue	ALL6
Clear	ALL7
Yellow	ALL8



Padlock

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



Actuator Lock Plate

Cat. No.: ALP101

Rubber Boots for Booted Actuators

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



1.2mm Actuator Rubber Washer

Cat. No.: ARW1.2

3.2mm Actuator Rubber Washer

Cat. No.: ARW3.2



Replacement Key

Cat. No.: KY30



Bulb Extractor

Cat. No.: 2BA15SE

Contact Block Installation Screws

Cat #.	Dimensions	Used With
SC25	M4 x 25 mm	S11 only
SC45	M4 x 45 mm	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)



Contact Elements

Description

Cat. No.

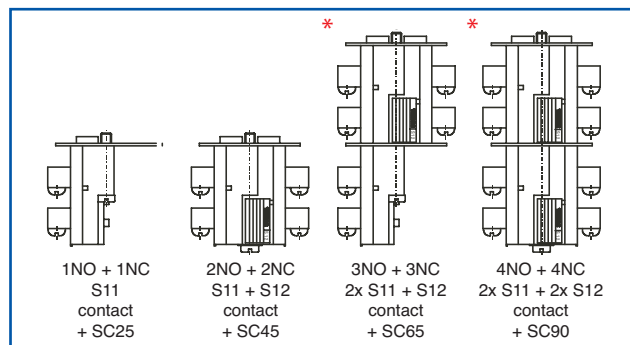
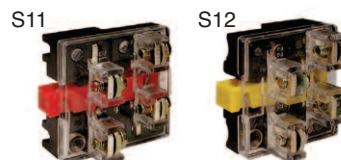
1 Normally Open + 1 Normally Closed Silver Contacts	S11
2 Normally Open + 2 Normally Closed Silver Contacts	S11 + S12

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	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).



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

Cat. No.	Page	Cat. No.	Page	Cat. No.	Page	Cat. No.	Page
1.01E+16	53	2ALF3LB-230D	22	2ALMPP4LB-024	13	2AMJ6	8
1.01E+16	53	2ALF4LB-012	22	2ALMPP4LB-048	13	2AMJ8	8
2.01E+16	36	2ALF4LB-024	22	2ALMPP4LB-110	13	2AML1	10
2.01E+16	37	2ALF4LB-048	22	2ALMPP4LB-230	13	2AML2	10
2.01E+16	36	2ALF4LB-110	22	2ALMPP5LB-012	13	2AML3	10
2.01E+16	37	2ALF4LB-110D	22	2ALMPP5LB-024	13	2AML4	10
1003A13	53	2ALF4LB-230	22	2ALMPP5LB-048	13	2AML4	31
1004C13	53	2ALF4LB-230D	22	2ALMPP5LB-110	13	2AML6	10
1004G13	53	2ALF5LB-012	22	2ALMPP5LB-230	13	2AML8	10
1005A13	53	2ALF5LB-024	22	2ALMPP6LB-012	13	2AMLJ1	10
1006C13	53	2ALF5LB-048	22	2ALMPP6LB-024	13	2AMLJ2	10
1006G13	53	2ALF5LB-110	22	2ALMPP6LB-048	13	2AMLJ3	10
153-601	34	2ALF5LB-110D	22	2ALMPP6LB-110	13	2AMLJ4	10
153-601/L	34	2ALF5LB-230	22	2ALMPP6LB-230	13	2AMLJ6	10
153-901	34	2ALF5LB-230D	22	2ALMPP7LB-012	13	2AMLJ8	10
153-901/L	34	2ALF6LB-012	22	2ALMPP7LB-024	13	2AMLKB1	10
153-902	34	2ALF6LB-024	22	2ALMPP7LB-048	13	2AMLKB2	10
153-902/1H	34	2ALF6LB-048	22	2ALMPP7LB-110	13	2AMLKB3	10
153-902/L	34	2ALF6LB-110	22	2ALMPP7LB-230	13	2AMLKB4	10
153-903	34	2ALF6LB-110D	22	2ALMPP8LB-012	13	2AMLKB6	10
153-903/L	34	2ALF6LB-230	22	2ALMPP8LB-024	13	2AMLKB8	10
153-904	34	2ALF6LB-230D	22	2ALMPP8LB-048	13	2AMLS1	10
153-904/L	34	2ALF7LB-012	22	2ALMPP8LB-110	13	2AMLS2	10
153-905	34	2ALF7LB-024	22	2ALMPP8LB-230	13	2AMLS3	10
153-905/L	34	2ALF7LB-048	22	2ALP1LB-012	20	2AMLS4	10
2005A13	36	2ALF7LB-110	22	2ALP1LB-024	20	2AMLS4	31
2005G13	37	2ALF7LB-110D	22	2ALP1LB-048	20	2AMLS6	10
2006C13	36	2ALF7LB-230	22	2ALP1LB-110D	20	2AMLS8	10
2008G13	36	2ALF7LB-230D	22	2ALP1LB-230	20	2AMPP1	8
2009A13	37	2ALF8LB-012	22	2ALP1LB-230D	20	2AMPP2	8
2009G13	37	2ALF8LB-024	22	2ALP3LB-012	20	2AMPP3	8
2010G13	36	2ALF8LB-048	22	2ALP3LB-024	20	2AMPP4	8
2011C13	37	2ALF8LB-110	22	2ALP3LB-048	20	2AMPP4	31
2014C13	36	2ALF8LB-110D	22	2ALP3LB-110	20	2AMPP6	8
2015A13	36	2ALF8LB-230	22	2ALP3LB-110D	20	2AMPP8	8
2015C13	37	2ALF8LB-230D	22	2ALP3LB-230	20	2AMPPJ1	8
2016A13	37	2ALM1LB-012	12	2ALP3LB-230D	20	2AMPPJ2	8
2AB1	6	2ALM1LB-024	12	2ALP4LB-012	20	2AMPPJ3	8
2AB2	6	2ALM1LB-048	12	2ALP4LB-024	20	2AMPPJ4	8
2AB3	6	2ALM1LB-110	12	2ALP4LB-048	20	2AMPPJ6	8
2AB4	6	2ALM1LB-230	12	2ALP4LB-110	20	2AMPPJ8	8
2AB6	6	2ALM3LB-012	12	2ALP4LB-110D	20	2AP1	6
2AB8	6	2ALM3LB-024	12	2ALP4LB-230	20	2AP2	6
2ADP	40	2ALM3LB-048	12	2ALP4LB-230D	20	2AP3	6
2AF1	6	2ALM3LB-110	12	2ALP5LB-012	20	2AP4	6
2AF1RH	6	2ALM3LB-230	12	2ALP5LB-024	20	2AP6	6
2AF2	6	2ALM4LB-012	12	2ALP5LB-048	20	2AP8	6
2AF2RH	6	2ALM4LB-024	12	2ALP5LB-110	20	2AS2-1	16
2AF3	6	2ALM4LB-048	12	2ALP5LB-110D	20	2AS2-2	16
2AF3RH	6	2ALM4LB-110	12	2ALP5LB-230	20	2AS2-3	16
2AF4	6	2ALM4LB-230	12	2ALP5LB-230D	20	2AS2-4	16
2AF4RH	6	2ALM5LB-012	12	2ALP6LB-012	20	2AS2-5	16
2AF6	6	2ALM5LB-024	12	2ALP6LB-024	20	2AS2-6	16
2AF6RH	6	2ALM5LB-048	12	2ALP6LB-048	20	2AS2E-1	16
2AF8	6	2ALM5LB-110	12	2ALP6LB-110	20	2AS2E-2	16
2AF8RH	6	2ALM5LB-230	12	2ALP6LB-110D	20	2AS2E-3	16
2AK2-01	16	2ALM6LB-012	12	2ALP6LB-230	20	2AS2E-4	16
2AK2-02	16	2ALM6LB-024	12	2ALP6LB-230D	20	2AS2E-5	16
2AK2-03	16	2ALM6LB-048	12	2ALP7LB-012	20	2AS2E-6	16
2AK2-04	16	2ALM6LB-110	12	2ALP7LB-024	20	2ASL1LB-1-012	18
2AK2-05	16	2ALM6LB-230	12	2ALP7LB-048	20	2ASL1LB-1-024	18
2AK2-06	16	2ALM7LB-012	12	2ALP7LB-110	20	2ASL1LB-1-048	18
2AK2-07	16	2ALM7LB-024	12	2ALP7LB-110D	20	2ASL1LB-1-110	18
2AK2-08	16	2ALM7LB-048	12	2ALP7LB-230	20	2ASL1LB-1-110D	18
2AK2-09	16	2ALM7LB-110	12	2ALP7LB-230D	20	2ASL1LB-1-230	18
2AK2-10	16	2ALM7LB-230	12	2ALP8LB-012	20	2ASL1LB-1-230D	18
2AK2-11	16	2ALM8LB-012	12	2ALP8LB-024	20	2ASL1LB-2-012	18
2ALBT7	31	2ALM8LB-024	12	2ALP8LB-048	20	2ASL1LB-2-024	18
2ALBT7	40	2ALM8LB-048	12	2ALP8LB-110	20	2ASL1LB-2-048	18
2ALF1LB-012	22	2ALM8LB-110	12	2ALP8LB-110D	20	2ASL1LB-2-110	18
2ALF1LB-024	22	2ALM8LB-230	12	2ALP8LB-230	20	2ASL1LB-2-110D	18
2ALF1LB-048	22	2ALMPP1LB-012	13	2ALP8LB-230D	20	2ASL1LB-2-230	18
2ALF1LB-110	22	2ALMPP1LB-024	13	2AM1	8	2ASL1LB-2-230D	18
2ALF1LB-110D	22	2ALMPP1LB-048	13	2AM2	8	2ASL1LB-3-012	18
2ALF1LB-230	22	2ALMPP1LB-110	13	2AM3	8	2ASL1LB-3-024	18
2ALF1LB-230D	22	2ALMPP1LB-230	13	2AM4	8	2ASL1LB-3-048	18
2ALF3LB-012	22	2ALMPP3LB-012	13	2AM6	8	2ASL1LB-3-110	18
2ALF3LB-024	22	2ALMPP3LB-024	13	2AM8	8	2ASL1LB-3-110D	18
2ALF3LB-048	22	2ALMPP3LB-048	13	2AMJ1	8	2ASL1LB-3-230	18
2ALF3LB-110	22	2ALMPP3LB-110	13	2AMJ2	8	2ASL1LB-3-230D	18
2ALF3LB-110D	22	2ALMPP3LB-230	13	2AMJ3	8	2ASL1LB-4-012	18
2ALF3LB-230	22	2ALMPP4LB-012	13	2AMJ4	8	2ASL1LB-4-024	18

Index

Cat. No.	Page	Cat. No.	Page	Cat. No.	Page	Cat. No.	Page
2ASL1LB-4-048	18	2ASL4LB-4-012	18	2ASL6LB-3-230	18	2ASL8LB-3-110	18
2ASL1LB-4-110	18	2ASL4LB-4-024	18	2ASL6LB-3-230D	18	2ASL8LB-3-110D	18
2ASL1LB-4-110D	18	2ASL4LB-4-048	18	2ASL6LB-4-012	18	2ASL8LB-3-230	18
2ASL1LB-4-230	18	2ASL4LB-4-110	18	2ASL6LB-4-024	18	2ASL8LB-3-230D	18
2ASL1LB-4-230D	18	2ASL4LB-4-110D	18	2ASL6LB-4-048	18	2ASL8LB-4-012	18
2ASL1LB-5-012	18	2ASL4LB-4-230	18	2ASL6LB-4-110	18	2ASL8LB-4-024	18
2ASL1LB-5-024	18	2ASL4LB-4-230D	18	2ASL6LB-4-110D	18	2ASL8LB-4-048	18
2ASL1LB-5-048	18	2ASL4LB-5-012	18	2ASL6LB-4-230	18	2ASL8LB-4-110	18
2ASL1LB-5-110	18	2ASL4LB-5-024	18	2ASL6LB-4-230D	18	2ASL8LB-4-110D	18
2ASL1LB-5-110D	18	2ASL4LB-5-048	18	2ASL6LB-5-012	18	2ASL8LB-4-230	18
2ASL1LB-5-230	18	2ASL4LB-5-110	18	2ASL6LB-5-024	18	2ASL8LB-4-230D	18
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2ASL3LB-1-012	18	2ASL4LB-6-230	18	2ASL6LB-6-110	18	2ASL8LB-6-024	18
2ASL3LB-1-024	18	2ASL4LB-6-230D	18	2ASL6LB-6-110D	18	2ASL8LB-6-048	18
2ASL3LB-1-048	18	2ASL5LB-1-012	18	2ASL6LB-6-230	18	2ASL8LB-6-110	18
2ASL3LB-1-110	18	2ASL5LB-1-024	18	2ASL6LB-6-230D	18	2ASL8LB-6-110D	18
2ASL3LB-1-110D	18	2ASL5LB-1-048	18	2ASL7LB-1-012	18	2ASL8LB-6-230	18
2ASL3LB-1-230	18	2ASL5LB-1-110	18	2ASL7LB-1-024	18	2ASL8LB-6-230D	18
2ASL3LB-1-230D	18	2ASL5LB-1-110D	18	2ASL7LB-1-048	18	2ATBT7	40
2ASL3LB-2-012	18	2ASL5LB-1-230	18	2ASL7LB-1-110	18	2ATF1-P2	14
2ASL3LB-2-024	18	2ASL5LB-1-230D	18	2ASL7LB-1-110D	18	2ATF1-P2-IO	14
2ASL3LB-2-048	18	2ASL5LB-2-012	18	2ASL7LB-1-230	18	2ATF2-F1	14
2ASL3LB-2-110	18	2ASL5LB-2-024	18	2ASL7LB-1-230D	18	2ATF2-F1-IO	14
2ASL3LB-2-110D	18	2ASL5LB-2-048	18	2ASL7LB-2-012	18	2ATF3-F4	14
2ASL3LB-2-230	18	2ASL5LB-2-110	18	2ASL7LB-2-024	18	2ATF3-F4-IO	14
2ASL3LB-2-230D	18	2ASL5LB-2-110D	18	2ASL7LB-2-048	18	2ATF3-P4	14
2ASL3LB-3-012	18	2ASL5LB-2-230	18	2ASL7LB-2-110	18	2ATF3-P4-IO	14
2ASL3LB-3-024	18	2ASL5LB-2-230D	18	2ASL7LB-2-110D	18	2ATF8-F2	14
2ASL3LB-3-048	18	2ASL5LB-3-012	18	2ASL7LB-2-230	18	2ATF8-F2-IO	14
2ASL3LB-3-110	18	2ASL5LB-3-024	18	2ASL7LB-2-230D	18	2ATF8-P2	14
2ASL3LB-3-110D	18	2ASL5LB-3-048	18	2ASL7LB-3-012	18	2ATF8-P2-IO	14
2ASL3LB-3-230	18	2ASL5LB-3-110	18	2ASL7LB-3-024	18	2ATL5LB F2F1-IO-012	15
2ASL3LB-3-230D	18	2ASL5LB-3-110D	18	2ASL7LB-3-048	18	2ATL5LB F2F1-IO-024	15
2ASL3LB-4-012	18	2ASL5LB-3-230	18	2ASL7LB-3-110	18	2ATL5LB F2F1-IO-048	15
2ASL3LB-4-024	18	2ASL5LB-3-230D	18	2ASL7LB-3-110D	18	2ATL5LB F2F1-IO-110	15
2ASL3LB-4-048	18	2ASL5LB-4-012	18	2ASL7LB-3-230	18	2ATL5LB F2F1-IO-230	15
2ASL3LB-4-110	18	2ASL5LB-4-024	18	2ASL7LB-3-230D	18	2ATL5LB F3F4-012	15
2ASL3LB-4-110D	18	2ASL5LB-4-048	18	2ASL7LB-4-012	18	2ATL5LB F3F4-024	15
2ASL3LB-4-230	18	2ASL5LB-4-110	18	2ASL7LB-4-024	18	2ATL5LB F3F4-048	15
2ASL3LB-4-230D	18	2ASL5LB-4-110D	18	2ASL7LB-4-048	18	2ATL5LB F3F4-110	15
2ASL3LB-5-012	18	2ASL5LB-4-230	18	2ASL7LB-4-110	18	2ATL5LB F3F4-230	15
2ASL3LB-5-024	18	2ASL5LB-4-230D	18	2ASL7LB-4-110D	18	2ATL5LB F3F4-IO-012	15
2ASL3LB-5-048	18	2ASL5LB-5-012	18	2ASL7LB-4-230	18	2ATL5LB F3F4-IO-024	15
2ASL3LB-5-110	18	2ASL5LB-5-024	18	2ASL7LB-4-230D	18	2ATL5LB F3F4-IO-048	15
2ASL3LB-5-110D	18	2ASL5LB-5-048	18	2ASL7LB-5-012	18	2ATL5LB F3F4-IO-110	15
2ASL3LB-5-230	18	2ASL5LB-5-110	18	2ASL7LB-5-024	18	2ATL5LB F3F4-IO-230	15
2ASL3LB-5-230D	18	2ASL5LB-5-110D	18	2ASL7LB-5-048	18	2ATL5LB F3P4-012	15
2ASL3LB-6-012	18	2ASL5LB-5-230	18	2ASL7LB-5-110	18	2ATL5LB F3P4-024	15
2ASL3LB-6-024	18	2ASL5LB-5-230D	18	2ASL7LB-5-110D	18	2ATL5LB F3P4-048	15
2ASL3LB-6-048	18	2ASL5LB-6-012	18	2ASL7LB-5-230	18	2ATL5LB F3P4-110	15
2ASL3LB-6-110	18	2ASL5LB-6-024	18	2ASL7LB-5-230D	18	2ATL5LB F3P4-230	15
2ASL3LB-6-110D	18	2ASL5LB-6-048	18	2ASL7LB-6-012	18	2ATL5LB F3P4-IO-012	15
2ASL3LB-6-230	18	2ASL5LB-6-110	18	2ASL7LB-6-024	18	2ATL5LB F3P4-IO-024	15
2ASL3LB-6-230D	18	2ASL5LB-6-110D	18	2ASL7LB-6-048	18	2ATL5LB F3P4-IO-048	15
2ASL4LB-1-012	18	2ASL5LB-6-230	18	2ASL7LB-6-110	18	2ATL5LB F3P4-IO-110	15
2ASL4LB-1-024	18	2ASL5LB-6-230D	18	2ASL7LB-6-110D	18	2ATL5LB F3P4-IO-230	15
2ASL4LB-1-048	18	2ASL6LB-1-012	18	2ASL7LB-6-230	18	2ATLBT7	40
2ASL4LB-1-110	18	2ASL6LB-1-024	18	2ASL7LB-6-230D	18	2BA9SE	40
2ASL4LB-1-110D	18	2ASL6LB-1-048	18	2ASL8LB-1-012	18	2BA9SE	55
2ASL4LB-1-230	18	2ASL6LB-1-110	18	2ASL8LB-1-024	18	2BP2	40
2ASL4LB-1-230D	18	2ASL6LB-1-110D	18	2ASL8LB-1-048	18	2BRK	40
2ASL4LB-2-012	18	2ASL6LB-1-230	18	2ASL8LB-1-110	18	2BRKT	40
2ASL4LB-2-024	18	2ASL6LB-1-230D	18	2ASL8LB-1-110D	18	2BT1	39
2ASL4LB-2-048	18	2ASL6LB-2-012	18	2ASL8LB-1-230	18	2BT2	39
2ASL4LB-2-110	18	2ASL6LB-2-024	18	2ASL8LB-1-230D	18	2BT3	39
2ASL4LB-2-110D	18	2ASL6LB-2-048	18	2ASL8LB-2-012	18	2BT4	39
2ASL4LB-2-230	18	2ASL6LB-2-110	18	2ASL8LB-2-024	18	2BT6	39
2ASL4LB-2-230D	18	2ASL6LB-2-110D	18	2ASL8LB-2-048	18	2BT7	31
2ASL4LB-3-012	18	2ASL6LB-2-230	18	2ASL8LB-2-110	18	2BT7	39
2ASL4LB-3-024	18	2ASL6LB-2-230D	18	2ASL8LB-2-110D	18	2BT7	40
2ASL4LB-3-048	18	2ASL6LB-3-012	18	2ASL8LB-2-230	18	2BT8	39
2ASL4LB-3-110	18	2ASL6LB-3-024	18	2ASL8LB-2-230D	18	2ESS1	40
2ASL4LB-3-110D	18	2ASL6LB-3-048	18	2ASL8LB-3-012	18	2ESS1-UL	40
2ASL4LB-3-230	18	2ASL6LB-3-110	18	2ASL8LB-3-024	18	2KY30	48
2ASL4LB-3-230D	18	2ASL6LB-3-110D	18	2ASL8LB-3-048	18	2KY455	10

Cat. No.	Page	Cat. No.	Page	Cat. No.	Page	Cat. No.	Page
2KY455	.16	2LP34	.38	2PLB8LB-048	.24	3PSF111	.26
2KY455	.40	2LP35	.38	2PLB8LB-110	.24	3PSF120	.26
2LAL1	.39	2LP36	.38	2PLB8LB-110D	.24	3PSF201	.26
2LAL1L	.39	2LP36	.38	2PLB8LB-230	.24	3PSF202	.26
2LAL3	.39	2LP36SP	.38	2PLB8LB-230D	.24	3PSF210	.26
2LAL3L	.39	2LP37	.38	2PLL1	.39	3PSF211	.26
2LAL4	.39	2LP37SP	.38	2PLL1L	.39	3PSF220	.26
2LAL4L	.39	2LP38	.38	2PLL3	.39	3PSF301	.26
2LAL5	.39	2LP38SP	.38	2PLL3L	.39	3PSF302	.26
2LAL5L	.39	2LP39	.38	2PLL4	.39	3PSF310	.26
2LAL6	.39	2LP40	.38	2PLL4L	.39	3PSF311	.26
2LAL6L	.39	2LP41	.38	2PLL5	.39	3PSF320	.26
2LAL7	.39	2LP41SP	.38	2PLL5L	.39	3PSF401	.26
2LAL7L	.39	2LP42	.38	2PLL6	.39	3PSF402	.26
2LAL8	.39	2LP43	.38	2PLL6L	.39	3PSF410	.26
2LAL8L	.39	2LP44	.38	2PLL7	.39	3PSF411	.26
2LHB	.40	2LP45	.38	2PLL7L	.39	3PSF420	.26
2LP01	.38	2LP46	.38	2PLL8	.39	3PSF601	.26
2LP01SP	.38	2LP47	.38	2PLL8L	.39	3PSF602	.26
2LP02	.38	2LP48	.38	2PPM	.40	3PSF610	.26
2LP02SP	.38	2LP49	.38	2PRG1	.31	3PSF611	.26
2LP03	.38	2LP50	.38	2PRG1	.40	3PSF620	.26
2LP03SP	.38	2LP51	.38	2PV2X	.30	3PSF801	.26
2LP04	.38	2LP55	.38	2PV3X	.30	3PSF802	.26
2LP04SP	.38	2LP56	.38	2PV4X	.30	3PSF810	.26
2LP05	.38	2LP57	.38	2PV5X	.30	3PSF811	.26
2LP05SP	.38	2LP58	.38	2PV6X	.30	3PSF820	.26
2LP06	.38	2LP59	.38	2PV7X	.30	3PSFPP101	.26
2LP06SP	.38	2LP66	.38	2PV8X	.30	3PSFPP110	.26
2LP07	.38	2LP69	.38	2PV9X	.30	3PSFPP111	.26
2LP07SP	.38	2LP70	.38	2RLW	.31	3PSFPP201	.26
2LP08	.38	2LP71	.38	3-001-Q-11	.30	3PSFPP210	.26
2LP08SP	.38	2LP72	.38	3-001-R-11	.30	3PSFPP211	.26
2LP09	.38	2LP73	.38	3PLBR1L-012	.28	3PSFPP301	.26
2LP10	.38	2LP74	.38	3PLBR1L-024	.28	3PSFPP310	.26
2LP101	.38	2LPXX	.38	3PLBR1L-048	.28	3PSFPP311	.26
2LP102	.38	2PAM	.40	3PLBR1L-110	.28	3PSFPP401	.26
2LP103	.38	2PAP	.40	3PLBR1L-230	.28	3PSFPP410	.26
2LP104	.38	2PLB1LB-012	.24	3PLBR1LS-012	.28	3PSFPP411	.26
2LP105	.38	2PLB1LB-024	.24	3PLBR1LS-024	.28	3PSFPP601	.26
2LP106	.38	2PLB1LB-048	.24	3PLBR1LS-048	.28	3PSFPP610	.26
2LP107	.38	2PLB1LB-110	.24	3PLBR1LS-110	.28	3PSFPP611	.26
2LP108	.38	2PLB1LB-110D	.24	3PLBR1LS-230	.28	3PSFPP801	.26
2LP10SP	.38	2PLB1LB-230	.24	3PLBR3L-012	.28	3PSFPP810	.26
2LP11	.38	2PLB1LB-230D	.24	3PLBR3L-024	.28	3PSFPP811	.26
2LP12	.38	2PLB3LB-012	.24	3PLBR3L-048	.28	3PSPP102	.26
2LP12SP	.38	2PLB3LB-024	.24	3PLBR3L-110	.28	3PSPP120	.26
2LP13	.38	2PLB3LB-048	.24	3PLBR3L-230	.28	3PSPP202	.26
2LP13SP	.38	2PLB3LB-110	.24	3PLBR4L-012	.28	3PSPP220	.26
2LP14	.38	2PLB3LB-110D	.24	3PLBR4L-024	.28	3PSPP302	.26
2LP14SP	.38	2PLB3LB-230	.24	3PLBR4L-048	.28	3PSPP320	.26
2LP15	.38	2PLB3LB-230D	.24	3PLBR4L-110	.28	3PSPP402	.26
2LP15SP	.38	2PLB4LB-012	.24	3PLBR4L-230	.28	3PSPP420	.26
2LP16	.38	2PLB4LB-024	.24	3PLBR5L-012	.28	3PSPP602	.26
2LP16SP	.38	2PLB4LB-048	.24	3PLBR5L-024	.28	3PSPP620	.26
2LP17	.38	2PLB4LB-110	.24	3PLBR5L-048	.28	3PSPP802	.26
2LP17SP	.38	2PLB4LB-110D	.24	3PLBR5L-110	.28	3PSPP820	.26
2LP18	.38	2PLB4LB-230	.24	3PLBR5L-230	.28	4-001-Q-10	.30
2LP18SP	.38	2PLB4LB-230D	.24	3PLBR6L-012	.28	4-001-R-10	.30
2LP19	.38	2PLB5LB-012	.24	3PLBR6L-024	.28	5308 959	.34
2LP19SP	.38	2PLB5LB-024	.24	3PLBR6L-048	.28	7211 981	.34
2LP20	.38	2PLB5LB-048	.24	3PLBR6L-110	.28	AB1	.44
2LP20SP	.38	2PLB5LB-110	.24	3PLBR6L-230	.28	AB2	.44
2LP21	.38	2PLB5LB-110D	.24	3PLBR7L-012	.28	AB3	.44
2LP22	.38	2PLB5LB-230	.24	3PLBR7L-024	.28	AB4	.44
2LP23	.38	2PLB5LB-230D	.24	3PLBR7L-048	.28	AB6	.44
2LP24	.38	2PLB6LB-012	.24	3PLBR7L-110	.28	AB8	.44
2LP25	.38	2PLB6LB-024	.24	3PLBR7L-230	.28	ADW	.40
2LP26	.38	2PLB6LB-048	.24	3PLBR7LS-012	.28	AF1	.44
2LP27	.38	2PLB6LB-110	.24	3PLBR7LS-024	.28	AF2	.44
2LP28	.38	2PLB6LB-110D	.24	3PLBR7LS-048	.28	AF3	.44
2LP28SP	.38	2PLB6LB-230	.24	3PLBR7LS-110	.28	AF4	.44
2LP29	.38	2PLB6LB-230D	.24	3PLBR7LS-230	.28	AF6	.44
2LP29SP	.38	2PLB7LB-012	.24	3PLBR8L-012	.28	AF8	.44
2LP30	.38	2PLB7LB-024	.24	3PLBR8L-024	.28	AK2-2PB	.48
2LP30SP	.38	2PLB7LB-048	.24	3PLBR8L-048	.28	AK2-2PI	.48
2LP31	.38	2PLB7LB-110	.24	3PLBR8L-110	.28	AK2-2PO	.48
2LP31SP	.38	2PLB7LB-110D	.24	3PLBR8L-230	.28	AK2-2PO-KD	.48
2LP32	.38	2PLB7LB-230	.24	3PRG1	.31	AK2-2PO-KD1	.48
2LP32SP	.38	2PLB7LB-230D	.24	3PSF101	.26	AK2-2PO-KD2	.48
2LP33	.38	2PLB8LB-012	.24	3PSF102	.26	AK2-2PO-KD4	.48
2LP33SP	.38	2PLB8LB-024	.24	3PSF110	.26	AK2-2PO-KD5	.48

Index

Cat. No.	Page	Cat. No.	Page	Cat. No.	Page	Cat. No.	Page
AK2-2POSR	48	ARW1.2	55	MCB15812	54	PLB4-024	52
AK2-3PB	48	AS2-2P	48	MCB158230	54	PLB4-048	52
AK2-3PC	48	AS2-2PSR	48	MCB158230D	54	PLB4-110	52
AK2-3PC-KD	48	AS2-3P	48	MCB15824	54	PLB4-230	52
AK2-3PC-KD1	48	BA15D110	54	MCB15848	54	PLB4LB-024	52
AK2-3PC-KD2	48	BA15D12	54	MCB91110	39	PLB4LB-048	52
AK2-3PC-KD3	48	BA15D220	54	MCB91110D	39	PLB4LB-110	52
ALF1-024	46	BA15D24	54	MCB9112	39	PLB4LB-230	52
ALF1-048	46	BA15D48	54	MCB91230	39	PLB5-024	52
ALF1-110	46	BA9SD110	39	MCB91230D	39	PLB5-048	52
ALF1-230	46	BA9SD12	39	MCB9124	39	PLB5-110	52
ALF1LB-024	46	BA9SD220	39	MCB9148	39	PLB5-230	52
ALF1LB-048	46	BA9SD24	39	MCB93110	39	PLB5LB-024	52
ALF1LB-110	46	BA9SD48	39	MCB93110D	39	PLB5LB-048	52
ALF1LB-230	46	BT1	55	MCB94110	39	PLB5LB-110	52
ALF3-024	46	BT2	55	MCB94110D	39	PLB5LB-230	52
ALF3-048	46	BT3	55	MCB9412	39	PLB6-024	52
ALF3-110	46	BT4	55	MCB94230	39	PLB6-048	52
ALF3-230	46	BT6	55	MCB94230D	39	PLB6-110	52
ALF3LB-024	46	BT8	55	MCB9424	39	PLB6-230	52
ALF3LB-048	46	KY30	55	MCB9448	39	PLB6LB-024	52
ALF3LB-110	46	LP01	54	MCB95110	39	PLB6LB-048	52
ALF3LB-230	46	LP02	54	MCB95110D	39	PLB6LB-110	52
ALF4-024	46	LP04	54	MCB9512	39	PLB6LB-230	52
ALF4-048	46	LP07	54	MCB95230	39	PLB7-024	52
ALF4-110	46	LP07	54	MCB95230D	39	PLB7-048	52
ALF4-230	46	LP08	54	MCB9524	39	PLB7-110	52
ALF4LB-024	46	LP09	54	MCB9548	39	PLB7-230	52
ALF4LB-048	46	LP10	54	MCB96110	39	PLB7LB-024	52
ALF4LB-110	46	LP108	54	MCB96110D	39	PLB7LB-048	52
ALF4LB-230	46	LP11	54	MCB9612	39	PLB7LB-110	52
ALF5-024	46	LP12	54	MCB96230	39	PLB7LB-230	52
ALF5-048	46	LP13	54	MCB96230D	39	PLB8-024	52
ALF5-110	46	LP14	54	MCB9624	39	PLB8-048	52
ALF5-230	46	LP15	54	MCB9648	39	PLB8-110	52
ALF5LB-024	46	LP16	54	MCB98110	39	PLB8-230	52
ALF5LB-048	46	LP17	54	MCB98110D	39	PLB8LB-024	52
ALF5LB-110	46	LP18	54	MCB9812	39	PLB8LB-048	52
ALF5LB-230	46	LP19	54	MCB98230	39	PLB8LB-110	52
ALF6-024	46	LP20	54	MCB98230D	39	PLB8LB-230	52
ALF6-048	46	LP24	54	MCB9824	39	PLL1	55
ALF6-110	46	LP36	54	MCB9848	39	PLL1	55
ALF6-230	46	LP41	54	NPT1/2	40	PLL3	55
ALF6LB-024	46	LP74	54	P2AF1	31	PLL3	55
ALF6LB-048	46	M20	40	P2AF1WA0	31	PLL4	55
ALF6LB-110	46	MCB151110	54	P2AF1WA90	31	PLL4	55
ALF6LB-230	46	MCB151110D	54	P2AF2	31	PLL5	55
ALF7-024	46	MCB15112	54	P2AF2WA0	31	PLL5	55
ALF7-048	46	MCB151230	54	P2AF2WA90	31	PLL6	55
ALF7-110	46	MCB151230D	54	P2AF3	31	PLL6	55
ALF7-230	46	MCB15124	54	P2AF4	31	PLL7	55
ALF7LB-024	46	MCB15148	54	P2AF6	31	PLL7	55
ALF7LB-048	46	MCB153110	54	P2AF7	31	PLL8	55
ALF7LB-110	46	MCB153110D	54	P2AM4	31	PLL8	55
ALF7LB-230	46	MCB15312	54	P2AP2	31	S1	41
ALF8-024	46	MCB153230	54	P2AP3	31	S2	41
ALF8-048	46	MCB153230D	54	P2AP4	31	S3	41
ALF8-110	46	MCB15324	54	P2AP6	31	S4	41
ALF8-230	46	MCB15348	54	P2AP8	31	S5	41
ALF8LB-024	46	MCB154110	54	P2AS2-1	31	S6	41
ALF8LB-048	46	MCB154110D	54	P2AS2-3	31	S7	41
ALF8LB-110	46	MCB15412	54	P2AS2-4	31	S8	41
ALF8LB-230	46	MCB154230	54	P2BRK	31	SC25	55
ALP101	55	MCB154230D	54	P2MN	31	SC25	55
AM1	50	MCB15424	54	PAM	55	SC45	55
AM2	50	MCB15448	54	PAP	55	SC45	55
AM3	50	MCB155110	54	PLB1-024	52	SC65	55
AM4	50	MCB155110D	54	PLB1-048	52	SC65	55
AM6	50	MCB15512	54	PLB1-110	52	SC90	55
AM8	50	MCB155230	54	PLB1-230	52	SC90	55
AMKB2	50	MCB155230D	54	PLB1LB-024	52		
AMKB4	50	MCB15524	54	PLB1LB-048	52		
AML2	50	MCB15548	54	PLB1LB-110	52		
AML4	50	MCB156110	54	PLB1LB-230	52		
AMLKB2	50	MCB156110D	54	PLB3-024	52		
AMLKB4	50	MCB15612	54	PLB3-048	52		
AP1	44	MCB156230	54	PLB3-110	52		
AP2	44	MCB156230D	54	PLB3-230	52		
AP3	44	MCB15624	54	PLB3LB-024	52		
AP4	44	MCB15648	54	PLB3LB-048	52		
AP6	44	MCB158110	54	PLB3LB-110	52		
AP8	44	MCB158110D	54	PLB3LB-230	52		

Commonly used metric and other useful conversions

Length		
inch [in.]	x25.4	=millimeters
millimeters [mm]	x0.03937	=inches
meters [m]	x3.281	=feet
miles [mi]	x1.609	=kilometers
kilometers [km]	x0.6214	=miles
Torque		
Newtonmeter [Nm]	x0.738	=lb-ft
lb-ft	x1.356	=Nm
lb-in	x0.113	=Nm
oz-in	x0.0071	=Nm
Power		
kilowatt [kW]	x1.341	=hp
hp	x0.7457	=kW
Moment of Inertia (WR²)		
lb-ft ²	x0.042	=kgm ²
kilogrammeter ² [kgm ²]	23.720	=lb-ft ²
Weight Mass and Force		
Newton [N]	x0.02248	=pounds
kilogram [kg]	x2.205	=pounds
pound [lb]	x4.448	=N
pound [lb]	x0.4536	=kg

Metric Cross-Sectional Areas ¹		American Wire Gauge		Metric Cross-Sections Areas ^a		American Wire Gauge	
Cross-Sectional Area	Equivalent Metric Area	AWG or MCM		Cross-Sectional Area	Equivalent Metric Area	AWG or MCM	
mm ²	mm ²			mm ²	mm ²		
0.50	0.519	20 AWG		25.0	21.15	4 AWG	
0.75	0.653	19		35.0	26.67	3	
	0.823	18			33.63	2	
					42.41	1	
	1.04	17		50.0	53.48	1/0	
	1.31	16			67.43	2/0	
1.5				70.0			
	1.65	15		95.0	85.03	3/0	
	2.08	14					
2.5					107.20	4/0	
	2.62	13		120.0	126.64	250 MCM	
	3.31	12		150.0	152.00	300	
4.0					177.35	350	
	4.17	11		185.0	202.71	400	
	5.26	10			253.35	500	
6.0				240.0			
	6.63	9		300.0	380.00	750	
	8.37	8		400.0			
10.0					506.71	1000	
	10.55	7		500.0			
	13.30	6		625.0			
16.0							
	16.77	5					

^aAs per IEC Publ. 228

DEGREES CELCIUS VERSUS DEGREES FAHRENHEIT															
°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	C	°F	° C	°F
-80	-112.0	-20	-4.0	5	41.0	30	86.0	55	131.0	80	176.0	105	221.0	130	266.0
-70	-94.0	-19	-2.2	6	42.8	31	87.8	56	132.8	81	177.8	106	222.8	131	267.8
-60	-65.0	-18	-0.4	7	44.6	32	89.6	57	134.6	82	179.6	107	224.6	132	269.6
-50	-58	-17	+1.4	8	46.4	33	91.4	58	136.4	83	181.4	108	226.4	133	271.4
-45	-49.1	-16	3.2	9	48.2	34	93.2	59	138.2	84	183.2	109	228.2	134	273.2
-40	-40.0	-15	5.0	10	50.0	35	95.0	60	140.0	85	185.0	110	230.0	135	275.0
-39	-38.2	-14	6.8	11	51.8	36	96.8	61	141.8	86	186.8	111	231.8	136	276.8
-38	-36.4	-13	8.6	12	53.6	37	98.6	62	143.6	87	188.6	112	233.6	137	278.6
-37	-34.6	-12	10.4	13	55.4	38	100.4	63	145.4	88	189.4	113	235.4	138	280.4
-36	32.8	-11	12.2	14	57.2	39	102.2	64	147.2	89	192.2	114	237.2	139	282.2
-35	-31.0	-10	14.0	15	59.0	40	104.0	65	149.0	90	194.0	115	239.0	140	284.0
-34	29.2	-9	15.8	16	60.8	41	105.8	66	150.8	91	195.8	116	240.8	141	285.8
-33	-27.4	-8	17.6	17	62.6	42	107.6	67	152.6	92	197.6	117	242.6	142	287.6
-32	-25.6	-7	19.4	18	64.4	43	109.4	68	154.4	93	199.4	118	244.4	143	289.4
-31	-23.8	-6	21.2	19	66.2	44	111.2	69	156.2	94	201.2	119	246.2	144	291.2
-30	-22.0	-5	23.0	20	68.0	45	113.0	70	158.0	95	203.0	120	248.0	145	293.0
-29	-22.0	-4	24.8	21	69.8	46	114.8	71	159.8	96	204.8	121	249.8	146	294.8
-28	-18.4	-3	26.6	22	71.6	47	116.8	72	161.6	97	206.6	122	251.6	147	296.6
-27	-16.6	-2	28.4	23	73.4	48	118.4	73	163.4	98	208.4	123	253.4	148	298.4
-26	-14.8	-1	30.2	24	75.2	49	120.2	74	165.2	99	210.2	124	255.2	149	300.2
-25	-13.0	0	32.0	25	77.0	50	122.0	75	167.0	100	212.0	125	257.0	150	302.0
-24	-11.2	1	33.8	26	78.8	51	123.8	76	168.8	101	213.8	126	258.8	160	320.0
-23	-9.4	2	35.6	27	80.6	52	125.6	77	170.6	102	215.6	127	260.6	170	338.0
-22	-7.6	3	37.4	28	82.4	53	127.4	78	172.4	103	217.4	128	262.4	180	356.0
-21	-5.8	4	39.2	29	84.2	54	129.2	79	174.2	104	219.2	129	264.2	190	374.0
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