

General Specifications

Electrical Capacity (Resistive Load)

Power Level (silver):	3A @ 125V AC
Logic Level (gold):	0.4VA maximum @ 28V AC/DC maximum (Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)
Logic/Power Level: (gold over silver)	Combines silver & gold ratings Note: Find additional explanation of dual rating & operating range in Supplement section.

Other Ratings

Contact Resistance:	20 milliohms maximum for silver; 30 milliohms maximum for gold
Insulation Resistance:	1,000 megohms minimum @ 500V DC
Dielectric Strength:	1,000V AC minimum between contacts for 1 minute minimum; 1,500V AC minimum between contacts & case for 1 minute minimum
Mechanical Life:	200,000 operations minimum
Electrical Life:	25,000 operations minimum for silver; 100,000 operations minimum for gold
Nominal Operating Force:	Single pole 2.45N; double pole 3.92N
Travel	Pretravel .024" (0.6mm); Overtravel .016" (0.4mm); Total Travel .039" (1.0mm)

Materials & Finishes

Plunger:	Brass with nickel plating
Bushing:	Brass with nickel plating
Frame:	Stainless steel
Case:	Polybutylene terephthalate (PBT) (UL94V-0)
Base:	Diallyl phthalate resin (UL94V-0)
Movable Contactor:	Phosphor bronze with silver or gold plating
Movable Contacts:	Silver alloy (code W); copper with gold plating (code G); or silver alloy with gold plating (code A)
Stationary Contacts:	Silver alloy with silver plating (code W); copper or brass with gold plating (code G); or silver with gold plating (code A)
Terminals:	Copper or brass with silver plating; copper or brass with gold plating

Environmental Data

Operating Temp Range:	-30°C through +85°C (-22°F through +185°F)
Humidity:	90 ~ 95% humidity for 96 hours @ 40°C (104°F)
Vibration:	10 ~ 55Hz with peak-to-peak amplitude of 1.5mm traversing the frequency range & returning in 1 minute; 3 right angled directions for 2 hours
Shock:	50G (490m/s ²) acceleration (tested in 6 right angled directions, with 3 shocks in each direction)

Installation

Mounting Torque:	1.5Nm (13.0 lb•in) for double nut; 0.7Nm (6.0 lb•in) for single nut
Cap Installation Force:	80.0N (18.0 lbf) maximum downward force on actuator
Soldering:	Wave Soldering (PC version): See Profile B in Supplement section. Manual Soldering: See Profile B in Supplement section.
Cleaning:	These devices are not process sealed. Hand clean locally using alcohol based solution. See Cleaning Specifications in Supplement section.

Standards & Certifications

Flammability Standards:	UL94V-0 case & base
UL:	File No. E44145 - Recognized only when ordered with marking on switch. Add "/U" or "/CUL" before dash in part number to order UL recognized switch. All single and double pole models recognized at 3A @ 125V AC or 0.4VA max. @ 28V DC max.
CSA:	File No. 023535_0_000 - Certified only when ordered with marking on switch. Add "/C" before dash in part number to order CSA certified switch. Single pole models with PC, solder lug, or Wirewrap terminals & double pole with PC or Wirewrap terminals certified at 3A @ 125V AC or 0.4VA @ 28V maximum.

Distinctive Characteristics

Snap-acting mechanism gives smooth actuation, short stroke, light touch, and audible feedback. This mechanism also provides long mechanical life.

High torque bushing construction prevents rotation or separation from frame during installation.

Antijamming design protects contacts from damage due to excessive downward force on the actuator.

Compatible companions with M series toggles. Body, bushing, and footprint dimensions ideal for mounting MB2400 pushbuttons and M toggles next to one another.

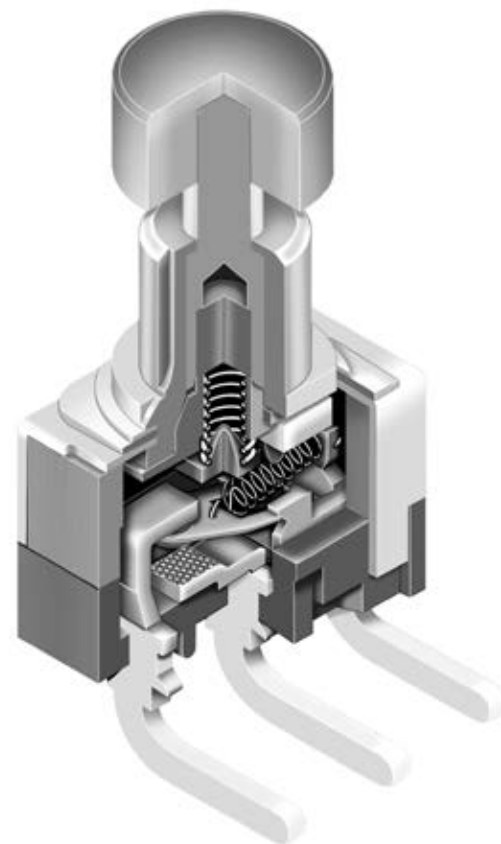
Stainless steel frame resists corrosion.

Longer center solder lug terminal simplifies wiring and soldering.

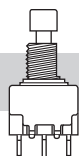
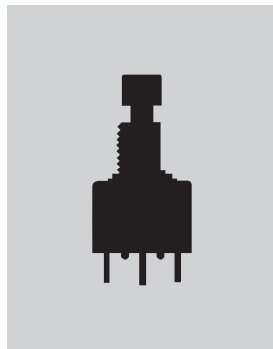
Silver contacts of specially composed alloy for hardness.

Epoxy sealed terminals prevent entry of solder flux and other contaminants.

Prominent external insulating barriers increase insulation resistance and dielectric strength.

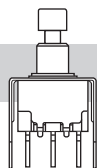


Actual Size



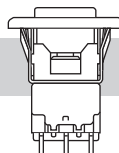
Bushing Mount

Page C98



Bracket PC Mount

Page C102



Snap-in Mount

Page C108

TYPICAL SWITCH ORDERING EXAMPLE

MB24

11

E1

W

01

F

A

Poles & Circuits

11	SPDT	ON	(ON)
61	DPDT	ON	(ON)

() = Momentary

Contact Materials & Ratings

W	Silver Rated 3A @ 125V AC
G	Gold Rated 0.4VA max @ 28V AC/DC max
A	Gold over Silver Rated 3A @ 125V AC & 0.4VA max @ 28V AC/DC max

Caps

F	.201" (5.1mm) Diameter
H	.295" (7.5mm) Diameter

Bushings

E1	.285" (7.24mm) Threaded with D Flat
E2	.285" (7.24mm) Smooth with D Flat
A1	.280" (7.1mm) Threaded with Keyway
A2	.280" (7.1mm) Smooth with Keyway
S1	.350" (8.9mm) Threaded with Keyway
S2	.350" (8.9mm) Smooth with Keyway

Terminals

01	Solder Lug
03	.250" (6.35mm) Straight PC
05	.425" (10.8mm) Wirewrap
06	.750" (19.05mm) Wirewrap
07	.964" (24.5mm) Wirewrap

Cap Colors

A	Black
B	White
C	Red

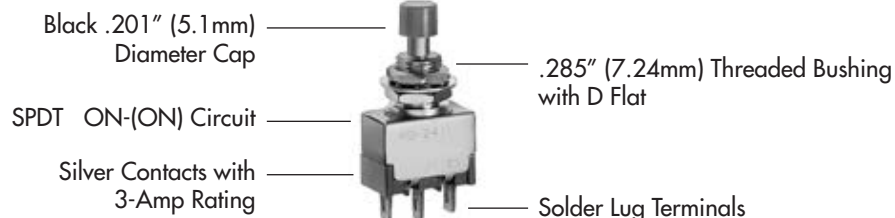
IMPORTANT:



Switches are supplied without UL, cULus & CSA marking unless specified.
UL, cULus & CSA recognized only when ordered with marking on the switch.
Specific models, ratings, & ordering instructions are noted on the General Specifications page.

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

MB2411E1W01-FA



POLES & CIRCUITS

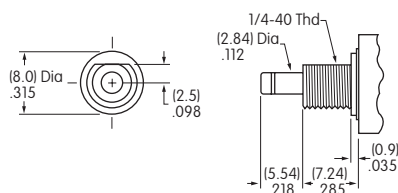
Pole	Model	Plunger Position () = Momentary		Connected Terminals		Throw & Switch Schematics
		Normal 	Down 	Normal 	Down 	
SP	MB2411	ON 	(ON)	1-3 	1-2	SPDT 
DP	MB2461	ON	(ON)	1-3 4-6 	1-2 4-5	DPDT 

Note: Terminal numbers are not actually on the switch.

BUSHINGS

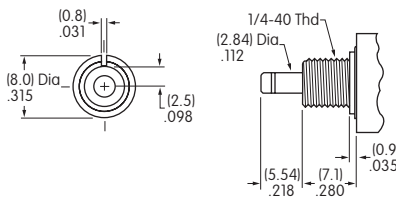
Note: Plunger selection is not required for MB2400 pushbuttons. The plunger can be used with or without a cap.

E1 .285" (7.24mm) Threaded with D Flat



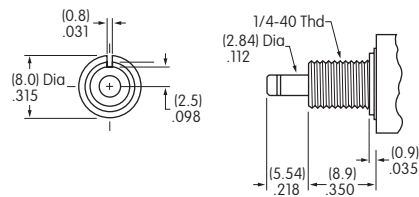
Maximum Panel Thickness with
Standard Hardware: .068" (1.74mm)

A1 .280" (7.1mm) Threaded with Keyway



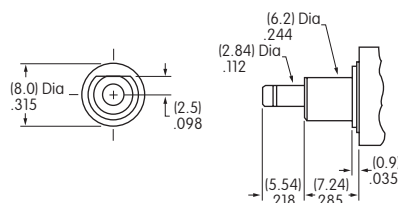
Maximum Panel Thickness with
Standard Hardware: .068" (1.74mm)

S1 .350" (8.9mm) Threaded with Keyway

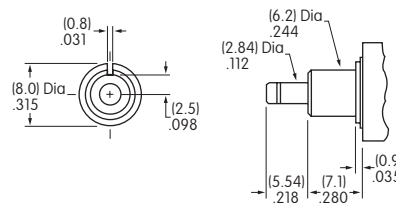


Maximum Panel Thickness with
Standard Hardware: .134" (3.40mm)

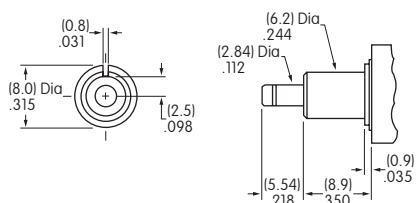
E2 .285" (7.24mm) Smooth with D Flat



A2 .280" (7.1mm) Smooth with Keyway

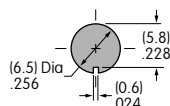


S2 .350" (8.9mm) Smooth with Keyway

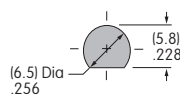


Panel Cutouts

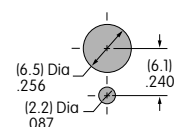
For A1, A2, S1, or S2 Bushing
with Keyway



For E1 or E2 Bushing
with D Flat



With
Optional Locking Ring



Standard hardware includes 2 hex nuts & 1 lockwasher.
Hardware is illustrated following the Typical Switch Dimension drawings.

CONTACT MATERIALS & RATINGS

W

Silver over Silver

Power Level

3A @ 125V AC

G

Gold over Brass or Copper

Logic Level

0.4VA maximum @ 28V AC/DC maximum

Note: Complete explanation of operating range in Supplement section.

A

Gold over Silver

 Power Level
or Logic Level

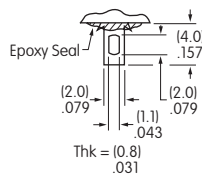
 3A @ 125V AC
or 0.4VA maximum @ 28V AC/DC maximum

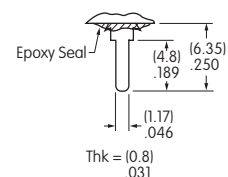
Note: This dual rated option is suitable when two or more identical switches are used in logic and in power circuits within the same application. See Supplement section for complete explanation of dual rating and operating range.

TERMINALS

01

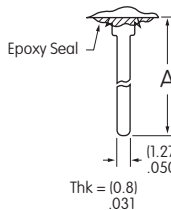
Solder Lug


03

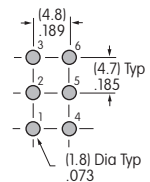
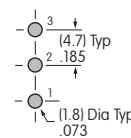
 .250" (6.35mm)
Straight PC


Wirewrap or Extended PC

05

 .425"
(10.8mm)

06

 .750"
(19.05mm)

 Refer to footprints if using
as extended PC terminal.

07

 .964"
(24.5mm)

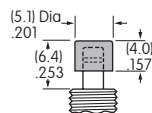
 Dimension A = terminal
lengths as shown beside
the code boxes at left.

Single Pole

Double Pole

CAPS & CAP COLORS

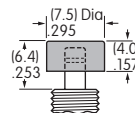
F

 AT475
.201" (5.1mm)
Diameter Cap


Material: Polyamide

Finish: Glossy


H

 AT496
.295" (7.5mm)
Diameter Cap


Material: Polyamide

Finish: Glossy


 Cap Colors
Available:

A

Black

B

White

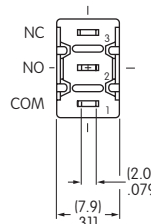
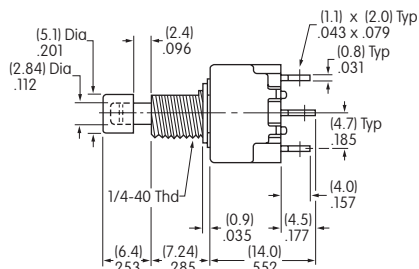
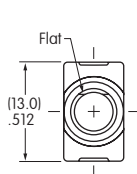
C

Red

TYPICAL SWITCH DIMENSIONS

Single Pole

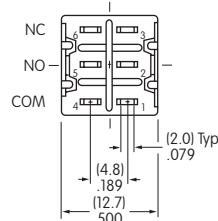
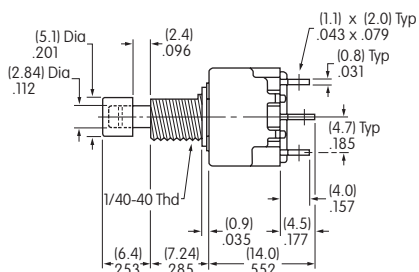
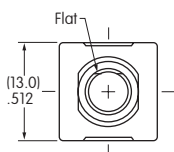
Solder Lug



MB2411E1W01-FA

Double Pole

Solder Lug



MB2461E1W01-FA

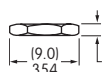
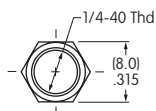
HARDWARE

Standard Hardware

AT513H Inch Threaded Hexagon Nut

2 included with each switch

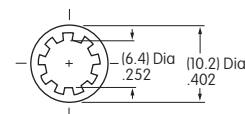
Material:
Brass with Nickel Plating



AT509 Lockwasher

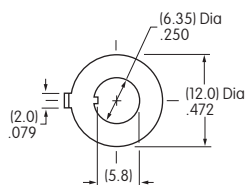
1 included with each switch

Material:
Steel with Zinc/Chromate



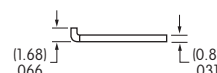
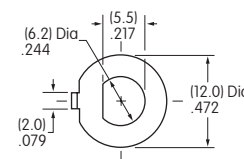
AT507H Locking Ring for A1 or S1 Bushing

Material:
Steel with Zinc/Chromate



AT515 Locking Ring for E1 Bushing

Material:
Steel with Zinc/Chromate



TYPICAL SWITCH ORDERING EXAMPLE

MB24

11

A2

G

40

—

F

A

Poles & Circuits

11	SPDT	ON	(ON)
61	DPDT	ON	(ON)

() = Momentary

Contact Materials & Ratings

W	Silver Rated 3A @ 125V AC
G	Gold Rated 0.4VA max @ 28V AC/DC max
A	Gold over Silver Rated 3A @ 125V AC & 0.4VA max @ 28V AC/DC max

Caps

F	.201" (5.1mm) Dia.
H	.295" (7.5mm) Dia.

Cap Colors

A	Black
B	White
C	Red

Bushings

A2	.280" (7.1mm) Smooth with Keyway
A1	.280" (7.1mm) Threaded with Keyway
E2	.285" (7.24mm) Smooth with D Flat
E1	.285" (7.24mm) Threaded with D Flat
S2	.350" (8.9mm) Smooth with Keyway
S1	.350" (8.9mm) Threaded with Keyway

Terminals

With Bracket

13	.250" (6.35mm) Straight PC with .465" (11.8mm) Bracket
15	.425" (10.8mm) Straight PC with .630" (16.0mm) Bracket
17	.964" (24.5mm) Straight PC with 1.150" (29.2mm) Bracket

With Reinforced Bracket

23	.250" (6.35mm) Straight PC with .465" (11.8mm) Bracket
25	.425" (10.8mm) Straight PC with .630" (16.0mm) Bracket
26	.750" (19.05mm) Straight PC with .953" (24.2mm) Bracket

With Terminal Support

30	Right Angle PC
40	Vertical PC

IMPORTANT:



Switches are supplied without UL, cULus & CSA marking unless specified.
UL, cULus & CSA recognized only when ordered with marking on the switch.
Specific models, ratings, & ordering instructions are noted on the General Specifications page.

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

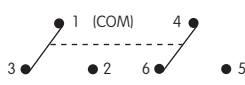
MB2411A2G40-FA

.280" (7.1mm) Smooth Bushing
with Keyway
Black .201" (5.1mm)
Diameter Cap



SPDT
ON-(ON) Circuit
Vertical PC Terminals
Gold Contacts with
0.4VA Rating

POLES & CIRCUITS

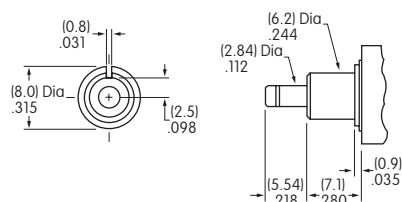
Pole	Model	Plunger Position () = Momentary		Connected Terminals		Throw & Switch Schematics
		Normal 	Down 	Normal 	Down 	
SP	MB2411	ON	(ON)	1-3	1-2	SPDT 
DP	MB2461	ON	(ON)	1-3 4-6	1-2 4-5	DPDT 

Note: Terminal numbers are not actually on the switch.

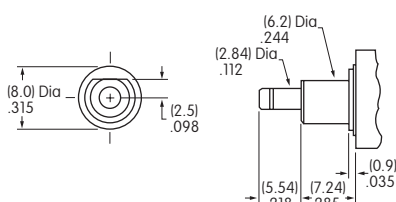
BUSHINGS

Note: Plunger selection is not required for MB2400 pushbuttons.
The plunger can be used with or without a cap.

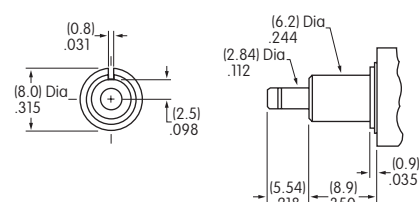
A2 .280" (7.1mm) Smooth with Keyway



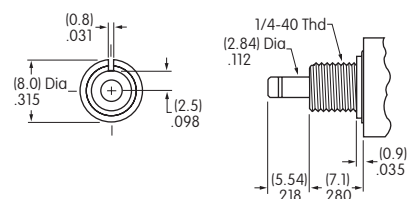
E2 .285" (7.24mm) Smooth with D Flat



S2 .350" (8.9mm) Smooth with Keyway

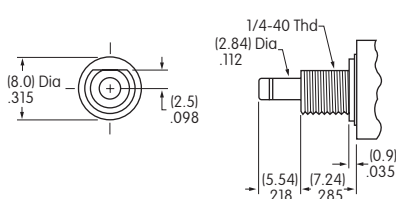


A1 .280" (7.1mm) Threaded with Keyway



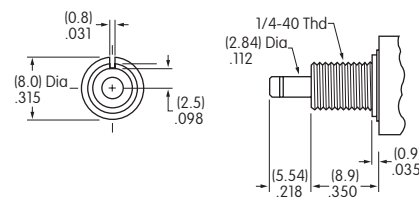
Maximum Panel Thickness with
Standard Hardware: .068" (1.74mm)

E1 .285" (7.24mm) Threaded with D Flat



Maximum Panel Thickness with
Standard Hardware: .068" (1.74mm)

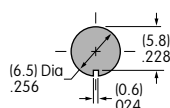
S1 .350" (8.9mm) Threaded with Keyway



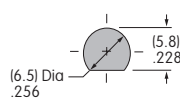
Maximum Panel Thickness with
Standard Hardware: .134" (3.40mm)

Panel Cutouts

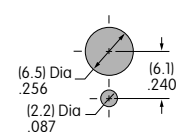
For A1, A2, S1, or S2 Bushing with Keyway



For E1 or E2 Bushing with D Flat



With Optional Locking Ring



Standard hardware includes 2 hex nuts & 1 lockwasher.
Hardware is illustrated following the Typical Switch Dimension drawings.

CONTACT MATERIALS & RATINGS

W
Silver over Silver
Power Level
3A @ 125V AC
G
Gold over Brass or Copper
Logic Level
0.4VA maximum @ 28V AC/DC maximum

Note: Complete explanation of operating range in Supplement section.

A
Gold over Silver
**Power Level
or Logic Level**
**3A @ 125V AC
or 0.4VA maximum @ 28V AC/DC maximum**

Note: This dual rated option is suitable when two or more identical switches are used in logic and in power circuits within the same application. See Supplement section for complete explanation of dual rating and operating range.

TERMINALS

Straight PC Mount with Bracket

13

**.250" (6.35mm)
Terminal with
.465" (11.8mm)
Bracket**

15

**.425" (10.8mm)
Terminal with
.630" (16.0mm)
Bracket**

17

**.964" (24.5mm)
Terminal with
1.150" (29.2mm)
Bracket**

23

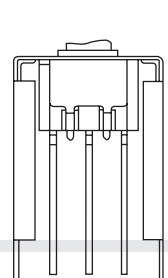
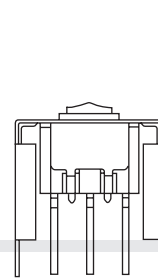
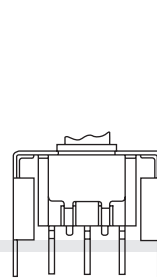
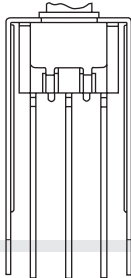
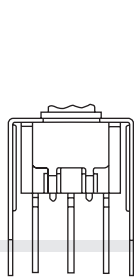
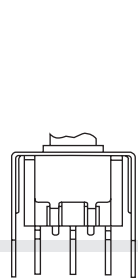
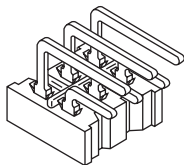
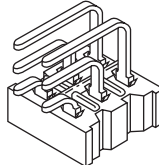
**.250" (6.35mm)
Terminal with
.465" (11.8mm)
Bracket**

25

**.425" (10.8mm)
Terminal with
.630" (16.0mm)
Bracket**

26

**.750" (19.05mm)
Terminal with
.953" (24.2mm)
Bracket**


30
Right Angle PC

40
Vertical PC


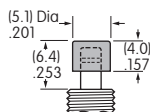
PCB footprints are on the following
Typical Switch Dimension pages.

CAPS & CAP COLORS

F

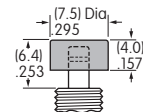
**AT475
.201" (5.1mm)
Diameter Cap**

Material: Polyamide
Finish: Glossy


H

**AT496
.295" (7.5mm)
Diameter Cap**

Material: Polyamide
Finish: Glossy

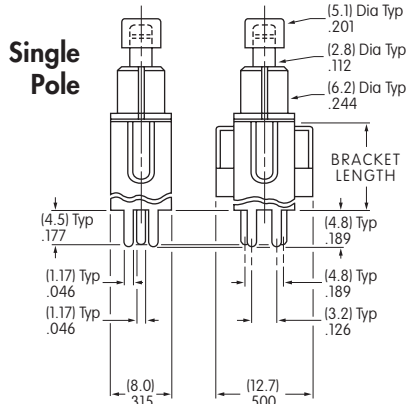
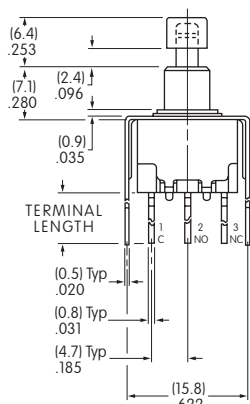


Cap Colors
Available:

A
Black
B
White
C
Red

TYPICAL SWITCH DIMENSIONS

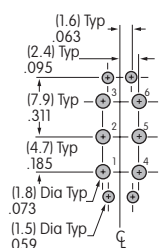
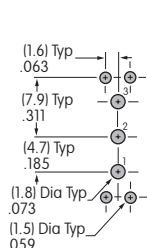
Straight PC • Bracket



Double Pole

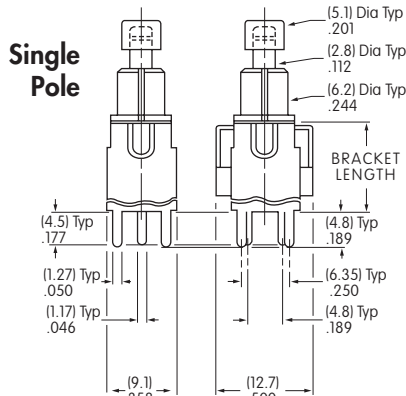
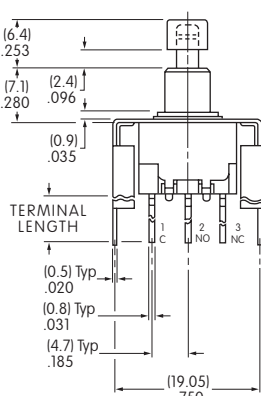


MB2411A2G13-FA



Terminal Code:	Terminal Length:	Bracket Length:
13	.250 (6.35mm)	.465 (11.8mm)
15	.425 (10.8mm)	.630 (16.0mm)
17	.964 (24.5mm)	1.150 (29.2mm)

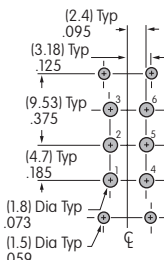
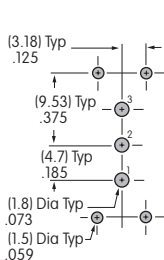
Straight PC • Reinforced Bracket



Double Pole



MB2411A2G23-FA

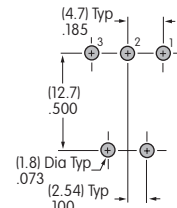
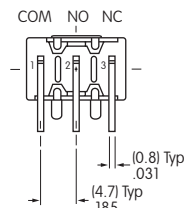
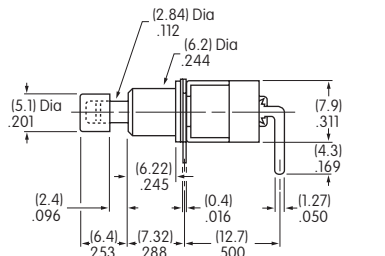
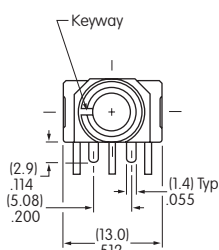


Terminal Code:	Terminal Length:	Bracket Length:
23	.250 (6.35mm)	.465 (11.8mm)
25	.425 (10.8mm)	.630 (16.0mm)
26	.750 (19.05mm)	.953 (24.2mm)

TYPICAL SWITCH DIMENSIONS

Right Angle PC

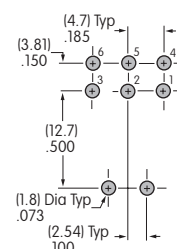
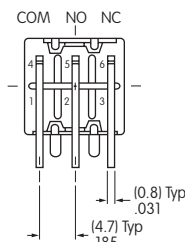
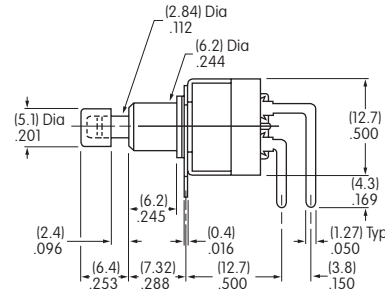
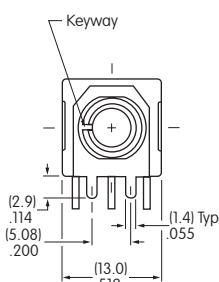
Single Pole



MB2411A2G30-FA

Right Angle PC

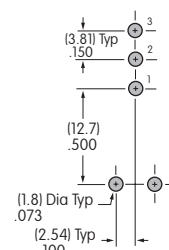
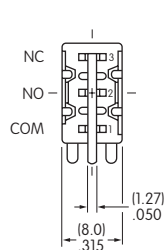
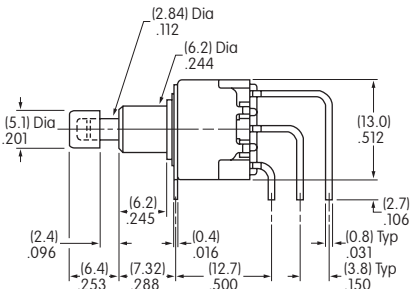
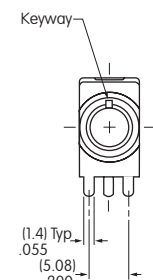
Double Pole



MB2461A2G30-FA

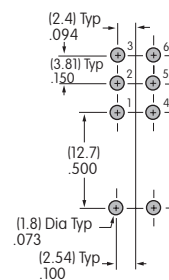
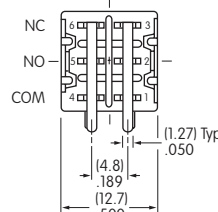
Vertical PC

Single Pole



MB2411A2G40-FA

Double Pole



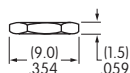
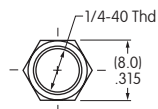
HARDWARE

Standard Hardware

AT513H Inch Threaded Hexagon Nut

2 included with each switch

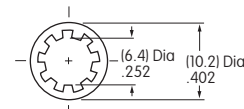
Material:
Brass with Nickel Plating



AT509 Lockwasher

1 included with each switch

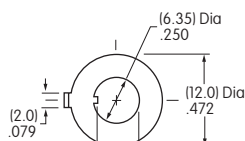
Material:
Steel with Zinc/Chromate



Optional Hardware

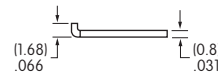
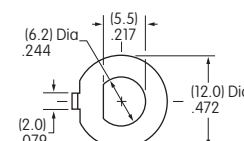
AT507H Locking Ring for A1 or S1 Bushing

Material:
Steel with Zinc/Chromate



AT515 Locking Ring for E1 Bushing

Material:
Steel with Zinc/Chromate



Toggles

Rockers

Pushbuttons

PB

Illuminated PB

Programmable

Keylocks

Rotaries

Slides

Tactiles

Tilt

Touch

Indicators

Accessories

Supplement

TYPICAL SWITCH

MB24

11

J

W

01

C

Poles & Circuits

11	SPDT	ON	(ON)
61	DPDT	ON	(ON)
() = Momentary			

Contact Materials & Ratings

W	Silver Rated 3A @ 125V AC
G	Gold Rated 0.4VA max @ 28V AC/DC max
A	Gold over Silver Rated 3A @ 125V AC & 0.4VA max @ 28V AC/DC max

Cap & Cap Colors

A	Black
B	White
C	Red
E	Yellow
F	Green
G	Blue
H	Gray

Mounting Frame

J	Snap-in Frame
----------	---------------

Terminals

01	Solder Lug
03	.250" (6.35mm) Straight PC
05	.425" (10.8mm) Wirewrap
06	.750" (19.05mm) Wirewrap
07	.964" (24.5mm) Wirewrap

IMPORTANT:



Switches are supplied without UL, cULus & CSA marking unless specified.
UL, cULus & CSA recognized only when ordered with marking on the switch.
Specific models, ratings, & ordering instructions are noted on the General Specifications page.

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

MB2411JW01-C



ORDERING EXAMPLE

3

A

—

C F

Optional Bezels	
1	Bezel without LEDs
*2	Bezel with 1 Round LED
*3	Bezel with 2 Round LEDs
*4	Bezel with 2 Rectangular LEDs
* Available in Black color only	

Bezel Colors	
A	Black
B	White
C	Red
E	Yellow
F	Green
G	Blue
H	Gray

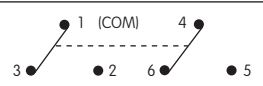
LED Colors			
1 LED			
C	Red		
F	Green		
2 LEDs			
Top LED		Bottom LED	
C	Red	C	Red
E	Yellow	E	Yellow
F	Green	F	Green

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

MB2411JW01-C-3A-CF



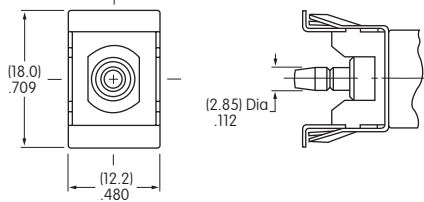
POLES & CIRCUITS

Pole	Model	Plunger Position () = Momentary		Connected Terminals		Throw & Switch Schematics
		Normal	Down	Normal	Down	
SP	MB2411	ON	(ON)	1-3	1-2	SPDT 
DP	MB2461	ON	(ON)	1-3 4-6	1-2 4-5	DPDT 

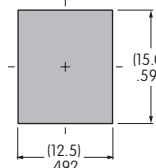
MOUNTING FRAME

J

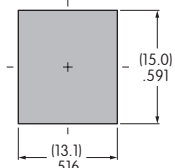
Snap-in Frame



Panel Cutout
for Single Pole
without Bezel



Panel Cutout
for Double Pole
without Bezel



Panel Thickness without Bezel: .039" ~ .157" (1.0mm ~ 4.0mm)

Panel Thickness with Bezel: .039" ~ .126" (1.0mm ~ 3.2mm)

CONTACT MATERIALS & RATINGS

W

Silver over Silver

Power Level

3A @ 125V AC

G

Gold over Brass or Copper

Logic Level

0.4VA maximum @ 28V AC/DC maximum

Note: Complete explanation of operating range in Supplement section.

A

Gold over Silver

Power Level
or Logic Level

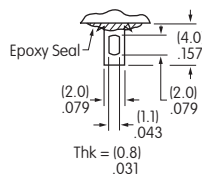
3A @ 125V AC
or 0.4VA maximum @ 28V AC/DC maximum

Note: This dual rated option is suitable when two or more identical switches are used in logic and in power circuits within the same application. See Supplement section for complete explanation of dual rating and operating range.

TERMINALS

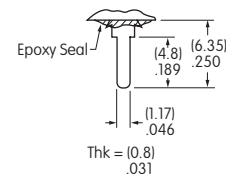
01

Solder Lug



03

.250" (6.35mm)
Straight PC



Wirewrap or Extended PC

05

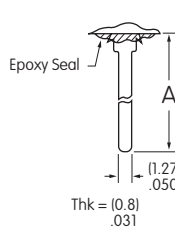
.425"
(10.8mm)

06

.750"
(19.05mm)

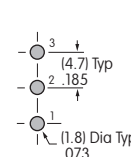
07

.964"
(24.5mm)

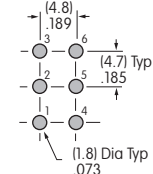


Refer to footprints if using
as extended PC terminal.

Dimension A = terminal
lengths as shown beside
the code boxes at left.



Single Pole

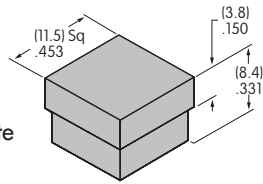


Double Pole

CAP & CAP COLORS

AT465 .453" (11.5mm) Square Cap

Material: Polycarbonate
Finish: Glossy



Contact factory
for matte finish.

Legend details
at end of this
section.

A

Black

B

White

C

Red

E

Yellow

F

Green

G

Blue

H

Gray

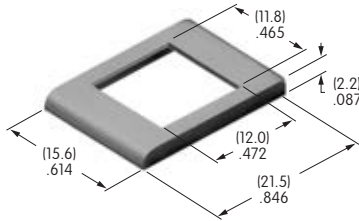
OPTIONAL SNAP-IN BEZELS & BEZEL COLORS

1

AT207 Bezel

Material: Polycarbonate
Finish: Glossy

Contact factory for matte
finish.



A

Black

B

White

C

Red

E

Yellow

F

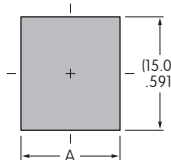
Green

G

Blue

H

Gray



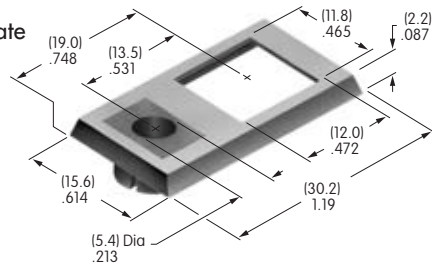
	Single Pole	Double Pole
A	(12.5)mm .492"	(13.1)mm .516"

2

AT208 Bezel for AT070 LED

Material: Polycarbonate
Finish: Glossy

Contact factory for
matte finish.

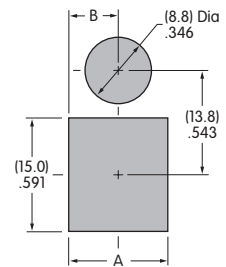


A

Black

LED colors & specifications
on next page.

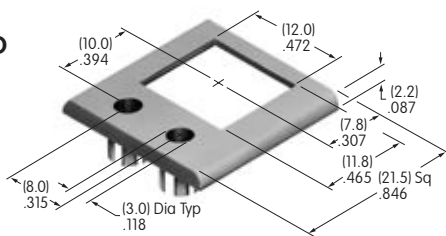
	Single Pole	Double Pole
A	(12.5)mm .492"	(13.1)mm .516"
B	(6.25)mm .246"	(6.55)mm .258"



3

AT212 Bezel for AT617 LED

Material:
Polycarbonate
Finish:
Semi-glossy

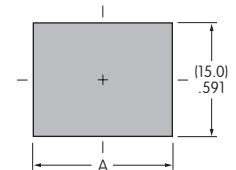


A

Black

LED colors & specifications
on next page.

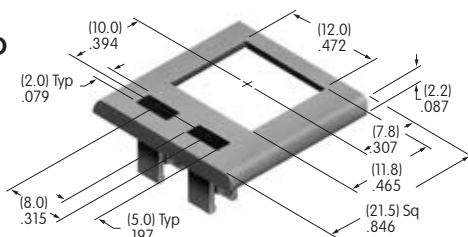
	Single Pole	Double Pole
A	(18.4)mm .724"	(18.7)mm .736"



4

AT213 Bezel for AT618 LED

Material:
Polycarbonate
Finish:
Semi-glossy

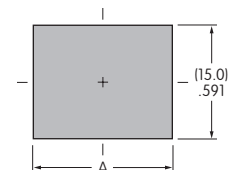


A

Black

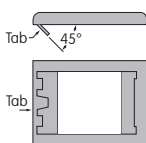
LED colors & specifications
on next page.

	Single Pole	Double Pole
A	(18.4)mm .724"	(18.7)mm .736"

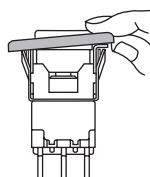


Bezel Assembly

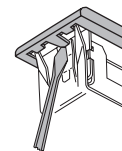
1. Pry out
tab on
bezel to a
45° angle.



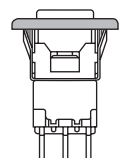
2. Insert
switch frame
under tab
and snap
on the bezel.



3. Push tab
back into
place.



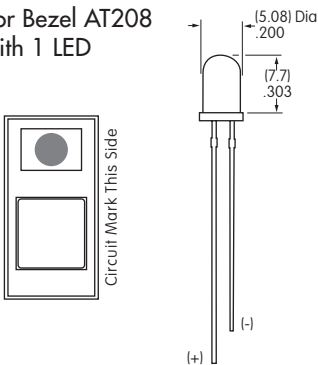
4. Snap
assembled
bezel and
switch into
panel.



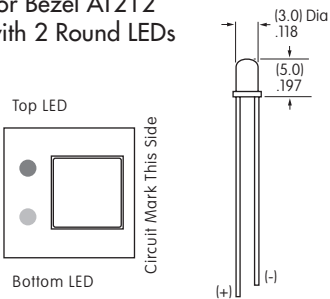
LED COLORS & SPECIFICATIONS

Bezel Orientation on Switch

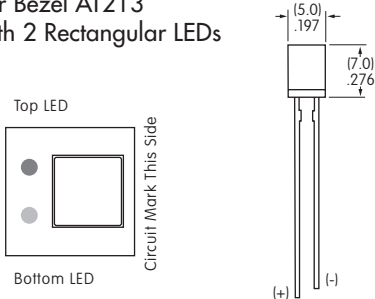
AT070 LED
For Bezel AT208
with 1 LED



AT617 LED
For Bezel AT212
with 2 Round LEDs



AT618 LED
For Bezel AT213
with 2 Rectangular LEDs



Note: Lead lengths may differ from manufacturing lot to lot. The longer lead is the anode (+).

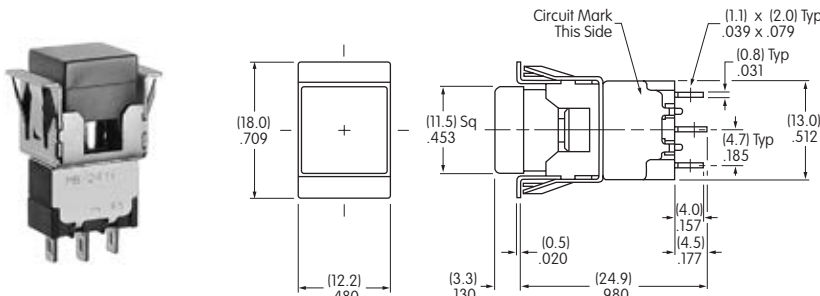
		AT070		AT617			AT618		
		C	F	C	E	F	C	E	F
	Color	Red	Green	Red	Yellow	Green	Red	Yellow	Green
Maximum Forward Current	I_{FM}	25mA	50mA	30mA	30mA	25mA	25mA	30mA	25mA
Typical Forward Current	I_F	20mA	30mA	20mA	20mA	20mA	20mA	20mA	20mA
Forward Voltage	V_F	2.8V	2.1V	2.0V	2.1V	2.25V	2.25V	2.1V	2.2V
Maximum Reverse Voltage	V_{RM}	4V	5V	5V	5V	5V	5V	5V	5V
Current Reduction Rate Above 25°C	ΔI_F	0.33 mA/°C	0.40 mA/°C	0.40 mA/°C	0.40 mA/°C	0.33 mA/°C	0.33 mA/°C	0.40 mA/°C	0.33 mA/°C
Ambient Temperature Range (when used with a bezel)		-10° ~ +70°C		-15° ~ +70°C			-25° ~ +70°C		

The electrical specifications shown are determined at a basic temperature of 25°C.
LED circuit is independent of switch operation. LED is colored in OFF state.

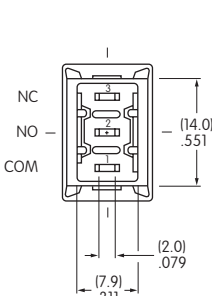
If the source voltage is greater than the rated voltage of the LED, a ballast resistor must be connected in series with the LED.
The ballast resistor calculation and more lamp detail are shown in the Supplement section.

TYPICAL SWITCH DIMENSIONS

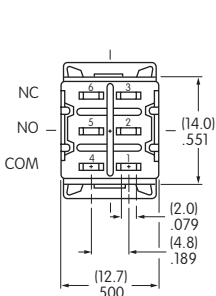
Solder Lug



Single Pole



Double Pole



MB2411JW01-C

Toggles

Rockers



Pushbuttons

Illuminated PB



Programmable

Keylocks



Rotaries

Slides

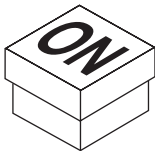


Tactiles:

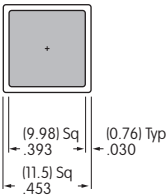
LEGENDS

NKK Switches can provide custom legends for caps. Contact factory for more information.

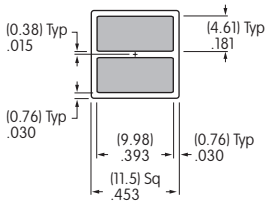
Suggested Printable Area for Cap



Recommended Print Method:
Screen Print or Pad Print
Epoxy based ink is recommended.



AT465



AT465

Shaded areas are printable areas.