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.

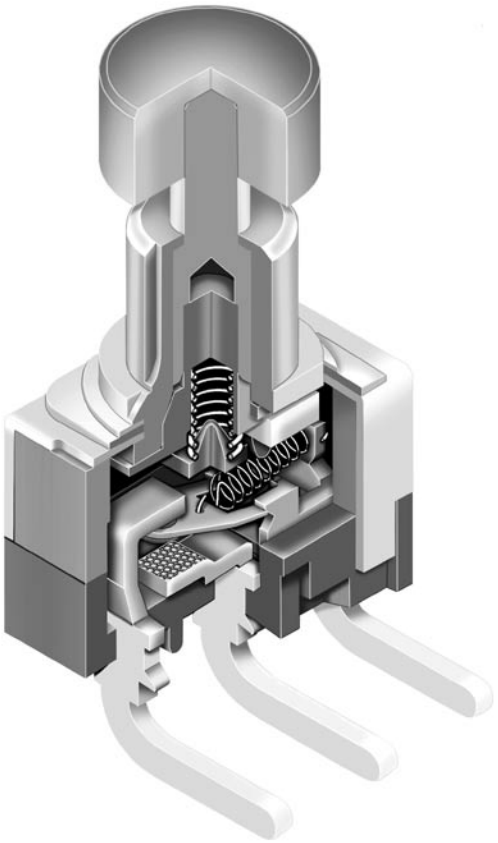
Stainless steel frame resists corrosion.

Longer center solder lug terminal simplifies wiring and soldering.

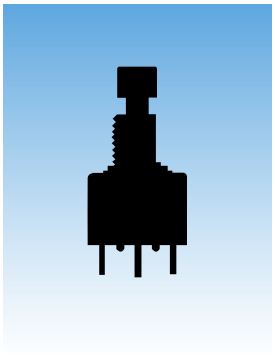
Silver contacts of specially composed alloy for hardness.

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

Prominent external insulating barriers increase insulation resistance and dielectric strength.



Actual Size



General Specifications

Electrical Capacity (Resistive Load)

Power Level (code W):	3A @ 125V AC
Logic Level (code G):	0.4VA maximum @ 28V AC/DC maximum (Applicable Range 0.1mA ~ 0.1A @ 20mV ~ 28V)
Logic/Power Level (code A):	Combines W & G 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)
Base:	Diallyl phthalate resin
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 available
UL & C-UL Recognized:	All single and double pole models recognized at 3A @ 125V AC or 0.4VA max. @ 28V DC max; UL File No. WOYR2.E44145; add "/U" to end of part number to order UL mark on switch C-UL File No. WOYR8.E44145; add "/C-UL" to end of part number to order C-UL mark on switch.
CSA Certified:	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; CSA File No. 023535-0-000; add "/C" to end of part number to order CSA mark on switch.

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

CAP COLORS

A	Black
B	White
C	Red

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, C-UL, & CSA markings unless specified. Specific models & ratings noted on General Specifications page.

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

MB2411E1W01-FA

Black .201″ (5.1mm) Diameter Cap

SPDT ON-(ON) Circuit

Silver Contacts with 3-Amp Rating

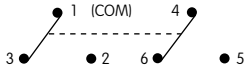
.285″ (7.24mm) Threaded Bushing with D Flat

Solder Lug Terminals

NKK®

Snap-Action Bushing Mount Series MB2400

POLES & CIRCUITS

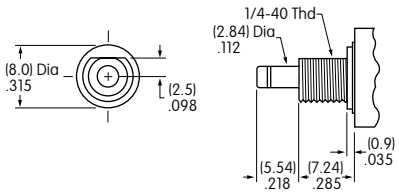
Pole	Model	Plunger Position ( ) = Momentary: Normal 	Plunger Position: Down 	Connected Terminals: Normal 	Connected Terminals: Down 	Throw & Switch Schematics
SP	MB2411	ON	(ON)	1-3	1-2	SPDT 
DP	MB2461	ON	(ON)	1-3 4-6	1-2 4-5	DPDT 

Note: Terminal numbers are not actually on the switch.

BUSHINGS

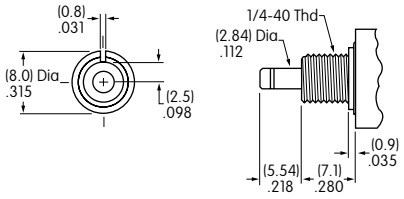
Note: Plunger selection is not required for MB2400 pushbuttons. The plunger can be used with or without a cap.

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



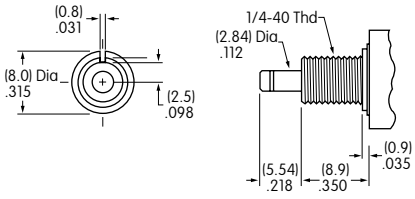
Maximum Panel Thickness with Standard Hardware: .068" (1.74mm)

A1 **.280" (7.1mm) Threaded with Keyway**



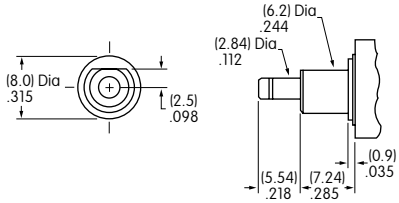
Maximum Panel Thickness with Standard Hardware: .068" (1.74mm)

S1 **.350" (8.9mm) Threaded with Keyway**

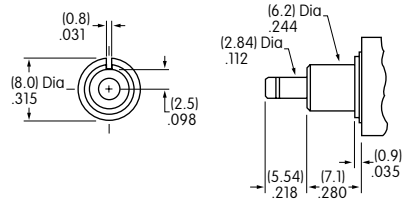


Maximum Panel Thickness with Standard Hardware: .134" (3.40mm)

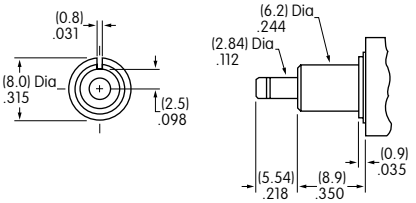
E2 **.285" (7.24mm) Smooth with D Flat**



A2 **.280" (7.1mm) Smooth with Keyway**

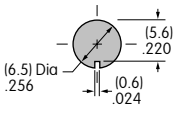


S2 **.350" (8.9mm) Smooth with Keyway**

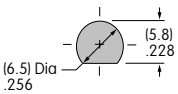


Panel Cutouts

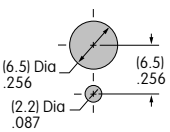
For A1, A2, S1, or S2 Bushing with Keyway



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**

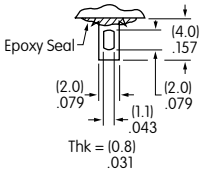
Note: Complete explanation of operating range in Supplement section.

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

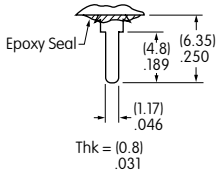
Note: This dual rated option is suitable when two or more identical switches are used in logic and in power circuits within the same application. See Supplement section for complete explanation of dual rating and operating range.

TERMINALS

01 **Solder Lug**



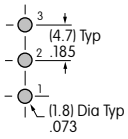
03 **.250" (6.35mm) Straight PC**



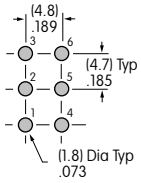
05 **.425" (10.8mm) Wirewrap or Extended PC**

06 **.750" (19.05mm) Wirewrap or Extended PC**

07 **.964" (24.5mm) Wirewrap or Extended PC**



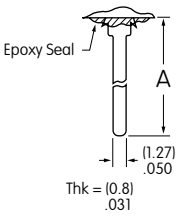
Single Pole



Double Pole

Refer to the footprints if using as extended PC terminal.

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

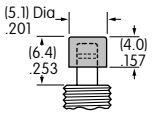


CAPS & CAP COLORS

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

Material: Polyamide

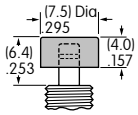
Finish: Glossy



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

Material: Polyamide

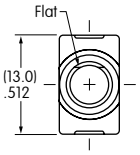
Finish: Glossy

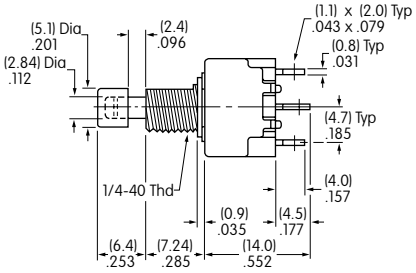


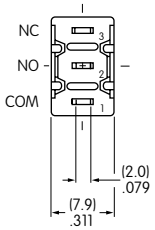
Cap Colors Available: A Black B White C Red

TYPICAL SWITCH DIMENSIONS

Solder Lug — Single Pole







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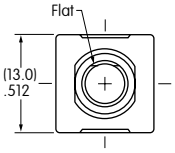
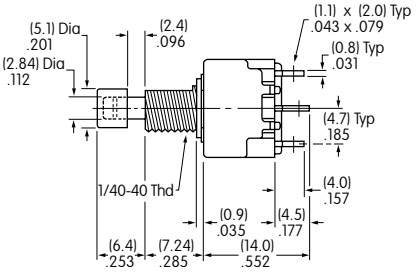
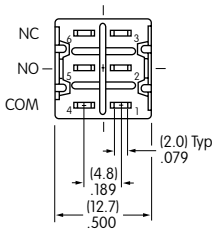
Solder Lug — Double Pole







MB2461E1W01-FA

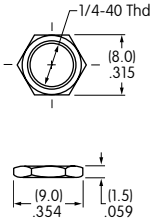
HARDWARE

Standard Hardware

AT513H Inch Threaded Hexagon Nut

2 included with each switch

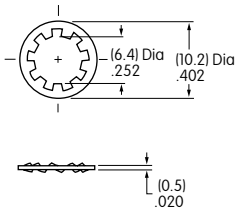
Material:
Brass with Nickel Plating



AT509 Lockwasher

1 included with each switch

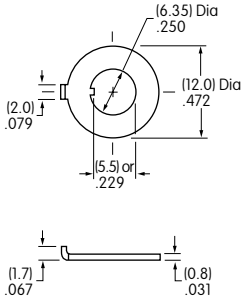
Material:
Steel with Zinc/Chromate



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