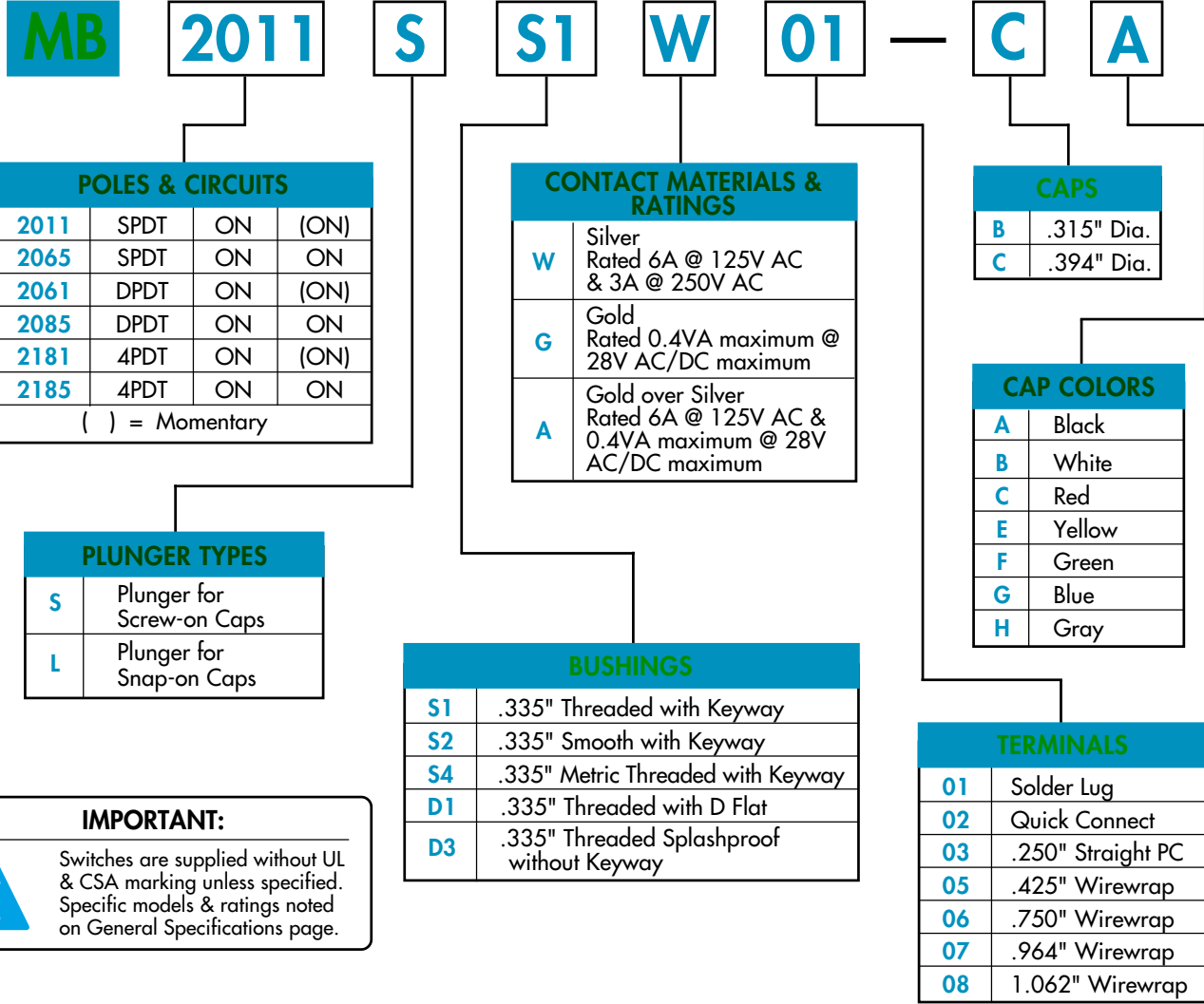
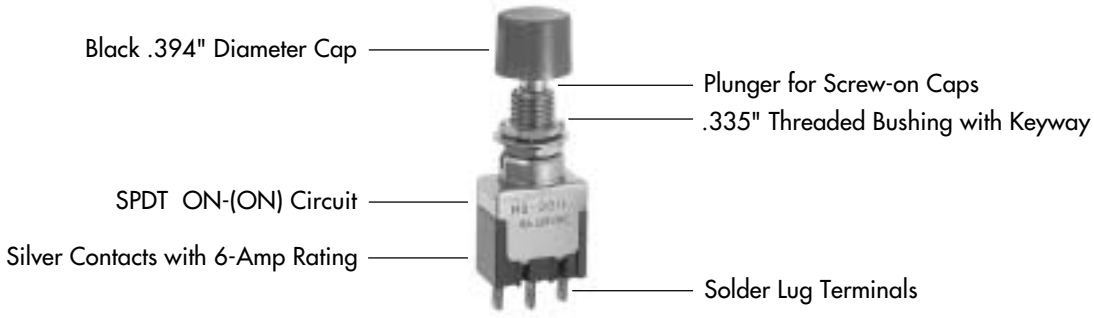


TYPICAL SWITCH ORDERING EXAMPLE



IMPORTANT:
Switches are supplied without UL & CSA marking unless specified. Specific models & ratings noted on General Specifications page.

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE
MB2011SS1W01-CA



GENERAL SPECIFICATIONS

Electrical Capacity (Resistive Load)

- Power Level (code W):** 6A @ 125V AC & 3A @ 250V AC or 3A @ 30V DC
 - Logic Level (code G):** 0.4VA maximum @ 28V AC/DC maximum
 - Logic/Power Level (code A):** Combines W & G ratings
- Note: See Supplement Index (page Z1) to find explanation of dual rating & operating range.

Other Ratings

- Contact Resistance:** 10 milliohms maximum for silver; 20 milliohms maximum for gold
- Insulation Resistance:** 1,000 megohms minimum @ 500V DC
- Dielectric Strength:** 1,000V AC minimum between contacts; 1,500V AC minimum between contacts & case
- Mechanical Life:** 50,000 operations minimum for splashproof models; 100,000 for all other models
- Electrical Life:** 25,000 operations minimum for silver at 100% power level;
50,000 operations minimum for silver at 50% power level;
50,000 operations minimum for gold
- Nominal Operating Force:** Momentary Action: 1-pole 950 grams; 2-pole 1,650 grams; 4-pole 2,400 grams;
Alternate Action: 1-pole 450 grams; 2-pole 720 grams; 4-pole 1,200 grams
- Plunger Travel:**

| | Screw-on Cap (Mom.) | Screw-on Cap (Alt.) | Snap-on Cap (Mom. & Alt.) |
|---------------|---------------------|---------------------|---------------------------|
| Pretravel: | 0.71 mm (.028") | 2.80 mm (.110") | 3.19 mm (.125") |
| Overtravel: | 1.09 mm (.043") | 1.10 mm (.043") | 1.26 mm (.050") |
| Total Travel: | 1.80mm (.071") | 3.90 mm (.153") | 4.45 mm (.175") |

Materials & Finishes

- Plunger:** Brass with nickel plating
- Bushing:** Brass with nickel plating
- Frame:** Stainless steel
- Case:** Diallyl phthalate resin
- Movable Contactor:** Phosphor bronze with silver or gold plating
- Movable Contacts:** Silver alloy (code W); copper with gold plating over nickel plating (code G); or silver alloy with gold plating over nickel plating (code A)
- Stationary Contacts:** Silver with silver plating (code W); copper or brass with gold plating over nickel plating (code G); or silver with gold plating over nickel plating (code A)
- Terminals:** Copper or brass with silver plating; copper or brass with gold plating over nickel 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 ~ 55 Hz with peak-to-peak amplitude of 1.5 mm traversing the frequency range & returning in 1 minute; 3 right angled directions for 2 hours
- Shock:** 50g acceleration (tested in 6 right angled directions, with 5 shocks in each direction)
- Sealing:** D3 bushing option equivalent to IP67





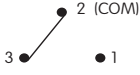
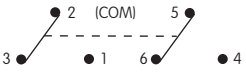
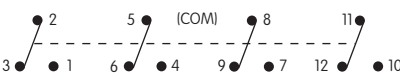
Installation

- Mounting Torque:** 15 kgf/cm (13 lb/in) for double nut; 7 kgf/cm (6 lb/in) for single nut
- Cap Installation Force:** 8.16 kg (18 lb) maximum downward force on actuator
- Soldering Time & Temperature:** 3 seconds @ 350°C or 5 seconds @ 270°C
- Process Seal:** Not available

Standards & Certifications

- Flammability Standards:** UL94V-0 available
- UL Recognized:** All models recognized at 6A @ 125V AC or 3A @ 250V AC or 0.4A @ 28V DC; UL File No. E44145
- CSA Certified:** All models certified at 6A @ 125V AC or 3A @ 250V AC or 0.4VA @ 28V maximum; CSA File No. LR23535

POLES & CIRCUITS

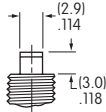
| | | Plunger Position () = Momentary | | Connected Terminals | | Throw & Schematics |
|------|------------------|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Pole | Model | Normal  Keyway | Down  | Normal  Keyway | Down  | Note: Terminal numbers are not actually on the switch. |
| SP | MB2011 MB2065 | ON | (ON) | 2-3 | 2-1 | SPDT  |
| DP | MB2061 MB2085 | ON | (ON) | 2-3 5-6 | 2-1 5-4 | DPDT  |
| 4P | MB2181 MB2185 | ON | (ON) | 2-3 5-6 8-9 11-12 | 2-1 5-4 8-7 11-10 | 4PDT  |

PLUNGER TYPES

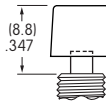
On alternate action models, after transferring circuit, the plunger returns to its original position and does not latch down.

S Plunger for Screw-on Caps

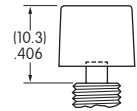
For
Momentary
Action:



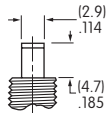
With
.315" Dia. Cap
AT413



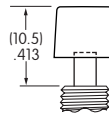
With
.394" Dia. Cap
AT407



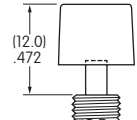
For
Alternate
Action:



With
.315" Dia. Cap
AT413

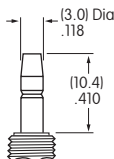


With
.394" Dia. Cap
AT407

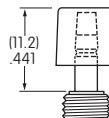


L Plunger for Snap-on Caps

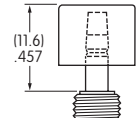
Momentary
& Alternate
Action:



With
.315" Dia. Cap
AT443

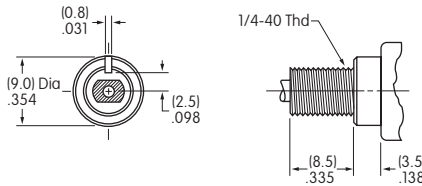


With
.394" Dia. Cap
AT442



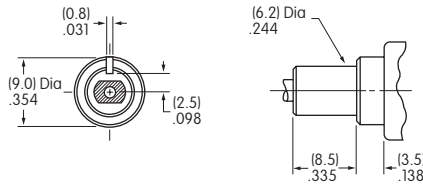
BUSHINGS

S1 .335" Threaded with Keyway

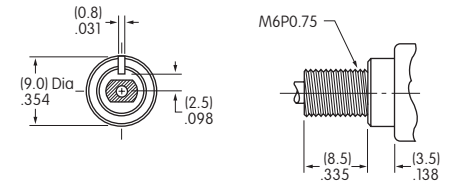


Maximum panel thickness with standard hardware: 3.9mm (.154")

S2 .335" Smooth with Keyway

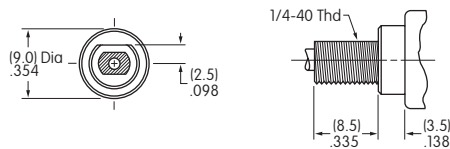


S4 .335" Metric Threaded with Keyway



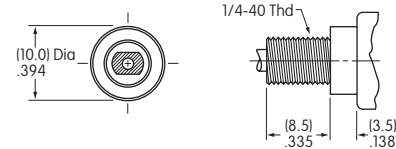
Maximum panel thickness with standard hardware: 3.9mm (.154")

D1 .335" Threaded with D Flat



Maximum panel thickness with standard hardware: 3.9mm (.154")

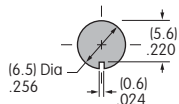
D3 .335" Threaded Splashproof without Keyway



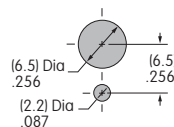
Maximum panel thickness with standard hardware: 6.1mm (.240")

Panel Cutouts

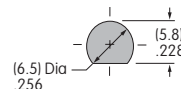
For S1, S2, or S4 Bushing with Keyway



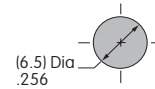
For S1 or S4 Bushing with Optional Locking Ring



For D1 Bushing with D Flat



For D3 Bushing without Keyway



Standard hardware for bushings S1, S4, & D1 includes 2 hex nuts & 1 lockwasher; D3 bushing has 1 hex nut & 1 o-ring. Standard & optional hardware are illustrated following the Typical Switch Dimension drawings.

CONTACT MATERIALS & RATINGS

W Silver over Silver **Power Level** 6A @ 125V AC & 3A @ 250V AC

G Gold over Brass or Copper **Logic Level** 0.4VA maximum @ 28V AC/DC maximum
Note: See Supplement Index (page Z1) to find complete explanation of operating range.

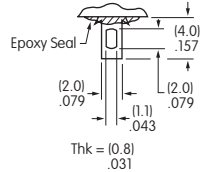
A Gold over Silver **Power Level or Logic Level** 6A @ 125V AC & 3A @ 250V AC or 0.4VA maximum @ 28V AC/DC maximum

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 Index (page Z1) to find complete explanation of dual rating and operating range.

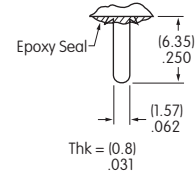
TERMINALS

01 Solder Lug

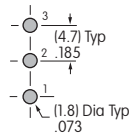
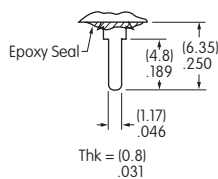
The .043" X .079" oblong hole accommodates 1 solid 18-gauge wire or 2 solid or stranded 20-gauge wires.



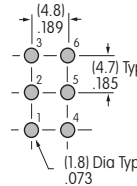
02 .062" Wide Quick Connect



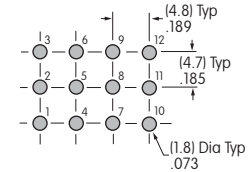
03 .250" Straight PC



Single Pole



Double Pole



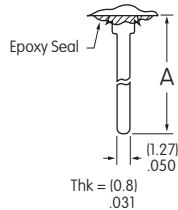
Four Pole

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

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

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

08 1.062" (27.0mm) Wirewrap or Extended PC

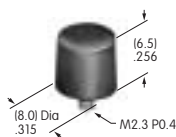


If using as extended PC terminal, refer to the above footprints.

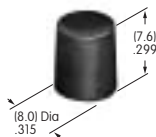
Dimension A = terminal lengths as shown beside the terminal codes at the left.

CAPS & CAP COLORS

B AT413
.315" Diameter Screw-on Cap
 For use with Plunger Code S
 Material: PBT
 Finish: Glossy



AT443
.315" Diameter Snap-on Cap
 For use with Plunger Code L
 Material: Polycarbonate
 Finish: Glossy



C AT407
.394" Diameter Screw-on Cap
 For use with Plunger Code S
 Material: PBT
 Finish: Glossy



AT442
.394" Diameter Snap-on Cap
 For use with Plunger Code L
 Material: Polycarbonate
 Finish: Glossy



Cap Colors Available:



Black



White



Red



Yellow



Green



Blue



Gray

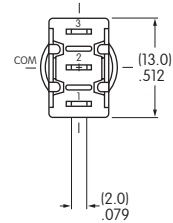
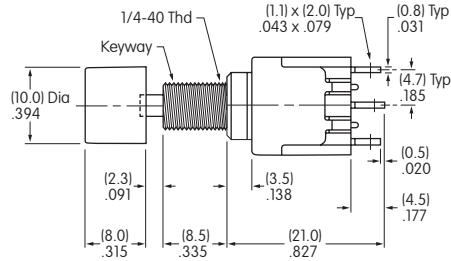
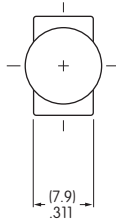


Clear

TYPICAL SWITCH DIMENSIONS

Solder Lug

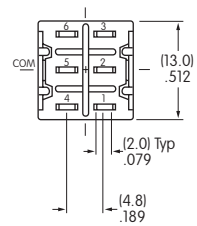
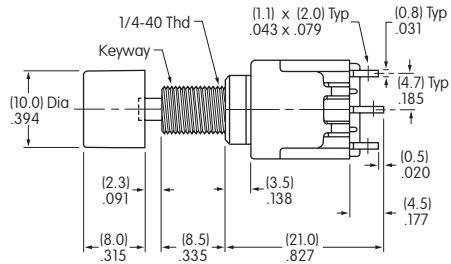
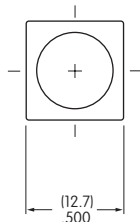
Single Pole



MB2011SS1W01-CA

Solder Lug

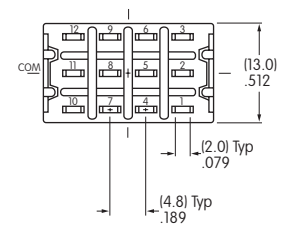
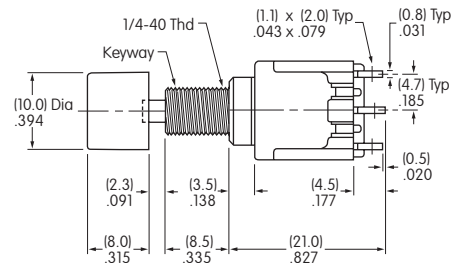
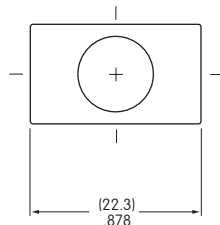
Double Pole



MB2061SS1W01-CA

Solder Lug

Four Pole



MB2181SS1W01-CA

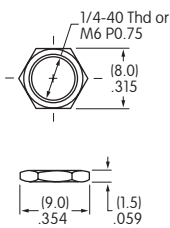
HARDWARE

Standard Hardware

AT513H for Inch AT513M for Metric Hex Nut

2 included with each switch (1 with splashproof models)

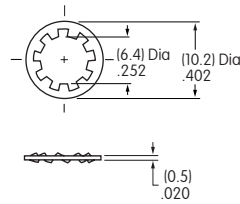
Material: Brass, nickel plated



AT509 Lockwasher

1 included with each switch (not with splashproof models)

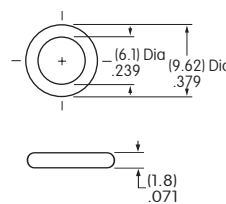
Material: Steel, chromate over zinc plating



AT516 O-ring for Splashproof Bushing

1 included with each splashproof

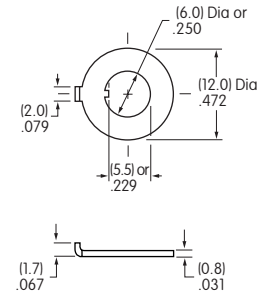
Material: Nitrile butadiene rubber



Optional Hardware

AT507H for Inch AT507M for Metric Locking Ring

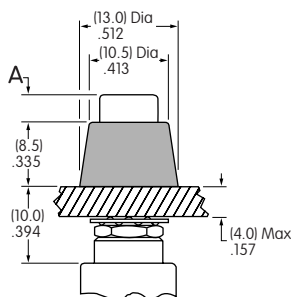
Material: Steel, chromate over zinc plating



Optional Mounting Collars / Conical Nuts

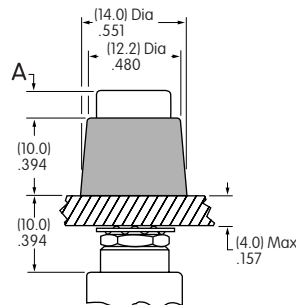
AT512H for Inch AT512M for Metric Conical Nut

Used with .315" Dia. Cap (cap code B)
Material: Brass with chrome plating



AT512CH for Inch AT512CM for Metric Conical Nut

Used with .394" Dia. Cap (cap code C)
Material: Brass with chrome plating



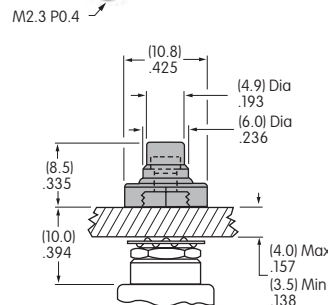
Dimension A = Cap Height

2.3mm (.091") for momentary with plunger code S
4.0mm (.157") for alternate with plunger code S
3.6mm (.142") for momentary & alternate with plunger code L

Optional Splashproof Boots for S Plunger

AT4041H for Inch AT4041M for Metric Boot for Momentary

Material: Silicone Rubber

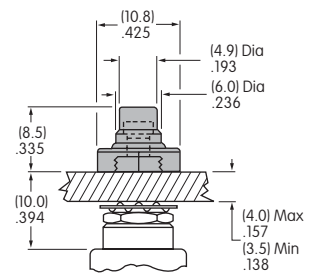


Operating Life: 100,000

Boots for momentary devices are accompanied by a threaded adaptor which extends the length of the plunger.

AT4042H for Inch AT4042M for Metric Boot for Alternate

Material: Silicone Rubber



Operating Life: 30,000