

GENERAL SPECIFICATIONS FOR S100s

A
Toggles

Electrical Capacity (Resistive & Inductive Load)

Power Level: Shown in the following table

Other Ratings

| | |
|-------------------------------|--|
| Contact Resistance: | 10 milliohms maximum |
| Insulation Resistance: | 200 megohms minimum @ 500V DC |
| Dielectric Strength: | 1,500V AC minimum for 1 minute minimum |
| Mechanical Life: | 30,000 operations minimum |
| Electrical Life: | 10,000 operations minimum |
| Operating Temp Range: | -10°C through +70°C (+14°F through +158°F) |

Materials & Finishes

| | |
|---|--|
| Toggle: | Brass with chrome plating |
| Bushing: | Brass with chrome or nickel plating |
| Case: | Phenolic resin |
| Case Cover: | Steel with zinc plating |
| Movable Contactor Plate: | Copper with silver plating |
| Movable & Stationary Contacts: | Silver alloy plus copper with silver plating |
| Terminals: | Copper with silver plating |

Environmental Data

Operating Temp Range: -10°C through +70°C (+14°F through +158°F)

Installation

| | |
|--|--|
| Mounting Torque: | 2.94Nm (26 lb•in) for double nut |
| Soldering Time & Temperature: | Manual Soldering: See Profile A in Supplement section. |

Standards & Certifications

CSA: File No. 023535_0_000 - Certified only when ordered with marking on switch.
Add "/C" to end of part number to order CSA certified switch.
Certified at 5A @ 125V AC & 2A @ 250V AC.

Rockers

Pushbuttons

Illuminated PB

Programmable

Keylocks

Rotaries

Slides

Tactiles

Tilt

Touch

Indicators

Accessories

Supplement

DOUBLE POLE WITH SOLDER LUG

| Model | * Approvals | | Pole & Throw | Toggle Position/Connected Terminals | | | | | | Electrical Capacity | | | | Angle of Throw |
|-------|-------------|-----|--------------|-------------------------------------|---------|--------|-----|---------|-----------|---------------------|--------|----------------|-----|----------------|
| | UL | CSA | | Down | | Center | Up | | Resistive | | | Inductive | | |
| | | | | ON | 2-1 5-4 | NONE | OFF | — | AC 125V | AC 250V | DC 30V | AC 125V PF 0.6 | | |
| S114 | — | ✓ | DPST | ON | 2-1 5-4 | NONE | OFF | — | 5A | 2A | 5A | 3A | 25° | |
| S116 | — | ✓ | DPDT | ON | 2-1 5-4 | NONE | ON | 2-3 5-6 | 5A | 2A | 5A | 3A | 25° | |
| S116R | — | — | DPDT | ON | 2-1 5-4 | NONE | ON | 2-3 5-6 | 5A | 2A | 5A | 3A | 25° | |

Throw & Schematics:



Note: Terminal numbers are actually on the switch

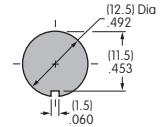
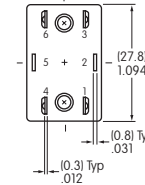
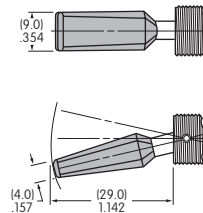
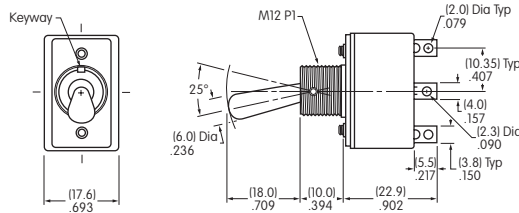
Notes: Standard Hardware: AT504M Knurled Nut, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.
 Optional Splashproof Boot Assemblies (only for bat lever models): AT401 & AT4181 boots plus hex nut and o-ring. See Accessories & Hardware section.

S114 & S116

S116R Black Polyamide Paddle



S116



S114 does not have terminals 3 & 6

Maximum Panel Thickness: .158" (4.0mm)

Rockers

Pushbuttons

Illuminated PB

Programmable

Keylocks

Rotaries

Slides

Tactiles

Tilt

Touch

Indicators

Accessories

Supplement

GENERAL SPECIFICATIONS FOR S1 ~ S29

A
Toggles

Electrical Capacity (Resistive & Inductive Load)

Power Level: Shown in the following tables

Other Ratings

Contact Resistance: 10 milliohms maximum
Insulation Resistance: 1,000 megohms minimum @ 500V DC
Dielectric Strength: 2,000V AC minimum for 1 minute minimum
Mechanical Life: 30,000 operations minimum for S5AW, S8AW, S9AW, S25AW, S28AW, S29AW
 50,000 operations minimum for all other models
Electrical Life: 25,000 operations minimum
Angle of Throw (α): Shown in tables on following pages

Materials & Finishes

Toggle: Brass with chrome plating
Bushing: Brass with chrome plating
Case: Phenolic resin
Case Cover: Steel with zinc plating
Movable Contactor: Copper with silver plating
Movable Contacts: Silver alloy capped on copper with silver plating
Stationary Contacts: Silver alloy capped on copper with silver plating
Terminals: Brass with tin plating

Environmental Data

Operating Temp Range: -30°C through +70°C (-22°F through +158°F) for Splashproof models;
 -10°C through +70°C (+14°F through +158°F) for all other models
Sealing: Splashproof & lever lock panel seal models meet IP67 standard

Installation

Mounting Torque: 1.47Nm (13 lb•in) for single nut on AW & AL models
 2.94Nm (26 lb•in) for double nut on other models
Maximum Panel Thickness: Shown beneath panel cutout in switch dimension drawings
Soldering Time & Temperature: Manual Soldering: See Profile A in Supplement section.

Standards & Certifications

UL: **File No. E44145 - Recognized only when ordered with marking on switch.**
 Add "/U" or "/CUL" to end of part number to order UL recognized switch.
 UL or cULus recognition designated beside part numbers on following pages.
 See Supplement section to find UL or cULus rating details.

CSA: **File No. 023535_0_000 - Certified only when ordered with marking on switch.**
 Add "/C" to end of part number to order CSA certified switch.
 CSA certification designated beside part numbers on following pages.
 See Supplement section to find CSA rating details.

Rockers

Pushbuttons

Illuminated PB

Programmable

Keylocks

Rotaries

Slides

Tactiles

Tilt

Touch

Indicators

Accessories

Supplement

Toggles
A

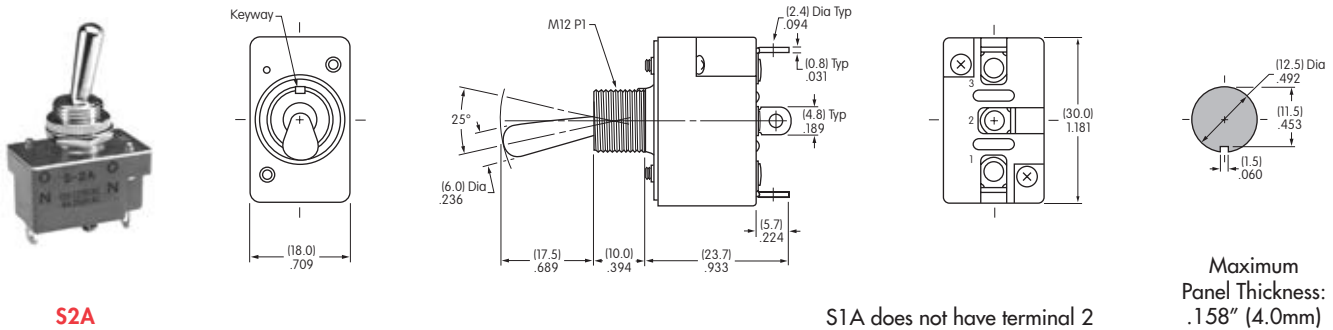
SINGLE POLE WITH SOLDER LUG

| * UL, cULus & CSA recognized only when ordered with marking on switch (see General Specs) | | | | Toggle Position/Connected Terminals | | | | | Electrical Capacity | | | |
|---|-------------|---|---|-------------------------------------|--------|--------|--------|-----------|---------------------|--------|----------------|----------------|
| Model | * Approvals | | | Pole & Throw | Down | Center | Up | Resistive | | | Inductive | Angle of Throw |
| | | | | | | | | AC 125V | AC 250V | DC 30V | AC 125V PF 0.6 | |
| S1A | ✓ | ✓ | ✓ | SPST | ON 1-3 | NONE | OFF — | 15A | 6A | 20A | 8A | 25° |
| S2A | ✓ | ✓ | ✓ | SPDT | ON 2-3 | NONE | ON 2-1 | 15A | 6A | 20A | 8A | 25° |
| S3A | ✓ | ✓ | ✓ | SPDT | ON 2-3 | OFF | ON 2-1 | 15A | 6A | 20A | 8A | 25° |

Throw & Schematics: SPST INTERNAL CONNECTION SPDT

Note: Terminal numbers are actually on the switch

Notes: Standard Hardware: AT504M Knurled Nut, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.
Optional Splashproof Boot Assemblies: AT401 & AT4181 boots plus hex nut & o-ring. See Accessories & Hardware section.



S2A

S1A does not have terminal 2

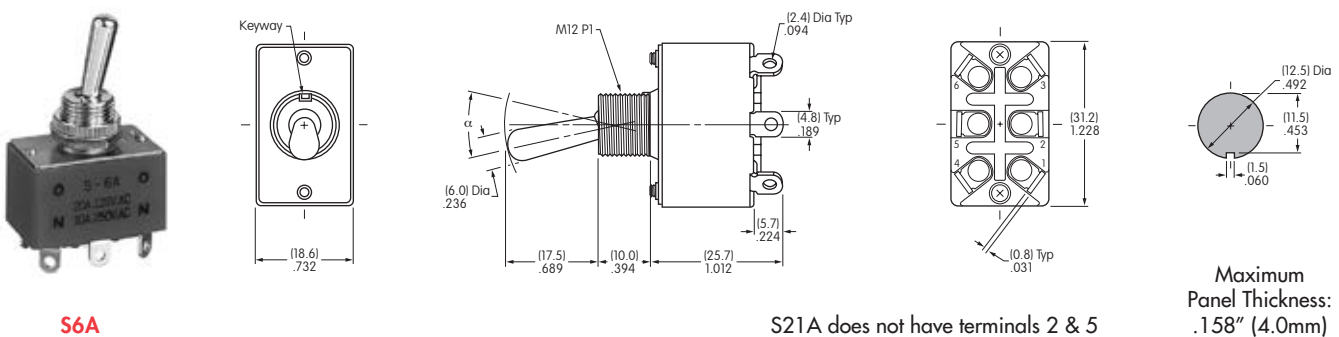
DOUBLE POLE WITH SOLDER LUG

| * UL, cULus & CSA recognized only when ordered with marking on switch (see General Specs) | | | | Toggle Position/Connected Terminals | | | | | Electrical Capacity | | | |
|---|-------------|---|---|-------------------------------------|------------|--------|------------|-----------|---------------------|--------|----------------|---------------------------|
| Model | * Approvals | | | Pole & Throw | Down | Center | Up | Resistive | | | Inductive | α = Angle of Throw |
| | | | | | | | | AC 125V | AC 250V | DC 30V | AC 125V PF 0.6 | |
| S21A | — | — | — | DPST | ON 1-3 4-6 | NONE | OFF — | 15A | 15A | 15A | 8A | 21° |
| S6A | ✓ | ✓ | ✓ | DPDT | ON 2-3 5-6 | NONE | ON 2-1 5-4 | 20A | 10A | 20A | 8A | 21° |
| S7A | — | — | ✓ | DPDT | ON 2-3 5-6 | OFF | ON 2-1 5-4 | 20A | 10A | 20A | 8A | 28° |

Throw & Schematics: DPST INTERNAL CONNECTION DPDT

Note: Terminal numbers are actually on the switch

Notes: Standard Hardware: AT504M Knurled Nut, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.
Optional Splashproof Boot Assemblies: AT401 & AT4181 boots plus hex nut & o-ring. See Accessories & Hardware section.



S6A

S21A does not have terminals 2 & 5

Rockers

Pushbuttons

Illuminated PB

Programmable

Keylocks

Rotaries

Slides

Tactiles

Tilt




Touch



Indicators

Accessories

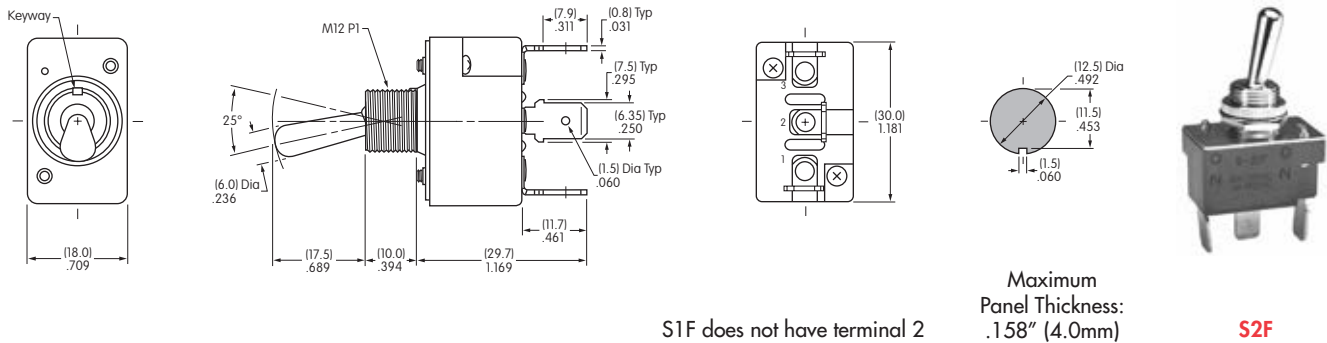
Supplement

SINGLE POLE WITH QUICK CONNECT




| Model | Approvals | | Pole & Throw | Toggle Position/Connected Terminals | | | | Electrical Capacity | | | | Angle of Throw |
|-------|-----------|----|--------------|---|---|---|-----------|---------------------|--------|----------------|-----|----------------|
| | UL | SP | | Down  | Center  | Up  | Resistive | | | Inductive | | |
| | | | | | | | AC 125V | AC 250V | DC 30V | AC 125V PF 0.6 | | |
| S1F | — | — | SPST | ON 1-3 | NONE | OFF — | 15A | 6A | 20A | 8A | 25° | |
| S2F | — | — | SPDT | ON 2-3 | NONE | ON 2-1 | 15A | 6A | 20A | 8A | 25° | |
| S3F | — | — | SPDT | ON 2-3 | OFF | ON 2-1 | 15A | 6A | 20A | 8A | 25° | |


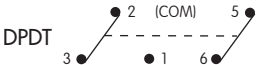
Throw & Schematics: SPST  INTERNAL CONNECTION  Note: Terminal numbers are actually on the switch

Notes: Standard Hardware: AT504M Knurled Nut, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.
Optional Splashproof Boot Assemblies: AT401 & AT4181 boots plus hex nut & o-ring. See Accessories & Hardware section.

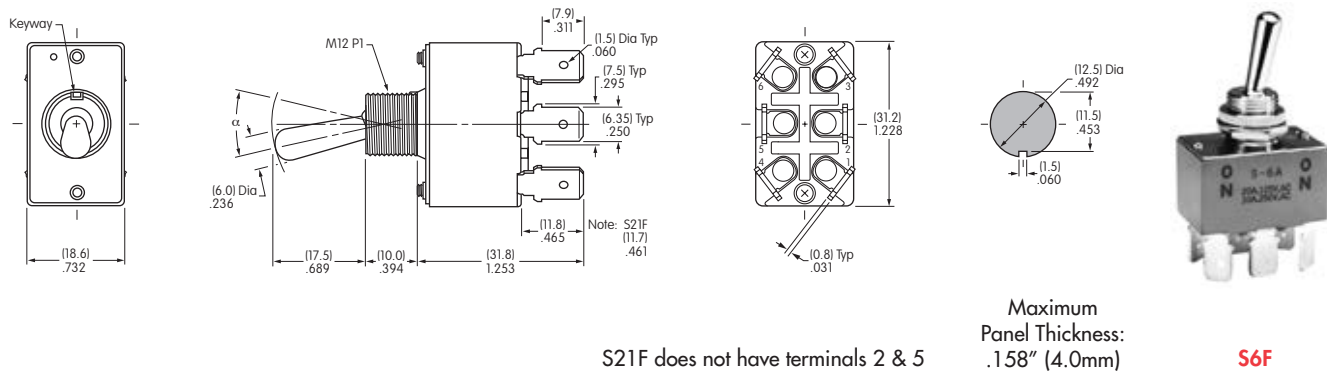


DOUBLE POLE WITH QUICK CONNECT




| Model | Approvals | | Pole & Throw | Toggle Position/Connected Terminals | | | | Electrical Capacity | | | | $\alpha =$ Angle of Throw |
|-------|-----------|----|--------------|---|---|---|-----------|---------------------|--------|----------------|-----|------------------------------|
| | UL | SP | | Down  | Center  | Up  | Resistive | | | Inductive | | |
| | | | | | | | AC 125V | AC 250V | DC 30V | AC 125V PF 0.6 | | |
| S21F | — | — | DPST | ON 1-3 4-6 | NONE | OFF — | 15A | 15A | 15A | 8A | 21° | |
| S6F | — | — | DPDT | ON 2-3 5-6 | NONE | ON 2-1 5-4 | 20A | 10A | 20A | 8A | 21° | |
| S7F | — | — | DPDT | ON 2-3 5-6 | OFF | ON 2-1 5-4 | 20A | 10A | 20A | 8A | 28° | |



Throw & Schematics: DPST  INTERNAL CONNECTION  Note: Terminal numbers are actually on the switch

Notes: Standard Hardware: AT504M Knurled Nut, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.
Optional Splashproof Boot Assemblies: AT401 & AT4181 boots plus hex nut & o-ring. See Accessories & Hardware section.



SINGLE POLE SOLDER LUG WITH PANEL SEAL

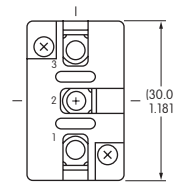
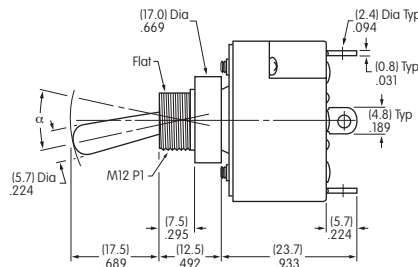
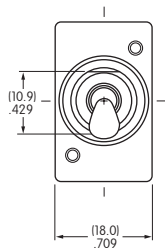
| Model | Approvals UL SF | Pole & Throw | Toggle Position/Connected Terminals () = Momentary | | | | Electrical Capacity | | | α = Angle of Throw |
|-------|--------------------|--------------|---|---|---|-----------|---------------------|--------|-----|---------------------------|
| | | | Down  | Center  | Up  | Resistive | | | | |
| | | | | | | AC 125V | AC 250V | DC 30V | | |
| S1AW | — | SPST | ON 1-3 | NONE | OFF — | 15A | 6A | 20A | 24° | |
| S2AW | — | SPDT | ON 2-3 | NONE | ON 2-1 | 15A | 6A | 20A | 24° | |
| S3AW | — | SPDT | ON 2-3 | OFF | ON 2-1 | 15A | 6A | 20A | 28° | |
| S5AW | — | SPDT | ON 2-3 | NONE | (ON) 2-1 | 15A | 6A | 20A | 20° | |
| S8AW | — | SPDT | (ON) 2-3 | OFF | (ON) 2-1 | 15A | 6A | 20A | 24° | |
| S9AW | — | SPDT | ON 2-3 | OFF | (ON) 2-1 | 15A | 6A | 20A | 24° | |

Throw & Schematics: SPST  INTERNAL CONNECTION  Note: Terminal numbers are actually on the switch

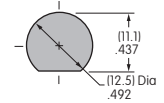
Notes: Standard Hardware: AT503M Face Hex Nut, Lockwasher, AT537 O-ring. See Accessories & Hardware section. For .250" Quick Connect terminals, add "F" to end of part number. See Quick Connect terminal dimensions on previous page. For further information, contact factory.



S2AW








S1AW does not have terminal 2



Maximum Panel Thickness: .158" (4.0mm)

DOUBLE POLE SOLDER LUG WITH PANEL SEAL

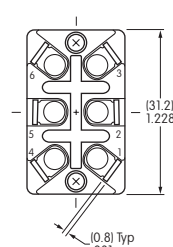
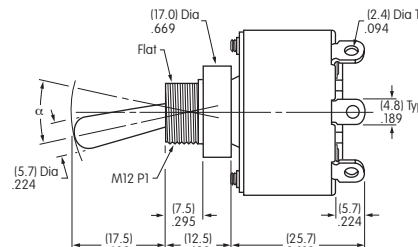
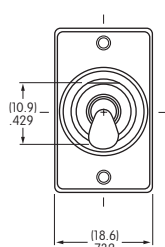
| Model | Approvals UL SF | Pole & Throw | Toggle Position/Connected Terminals () = Momentary | | | | Electrical Capacity | | | α = Angle of Throw |
|-------|--------------------|--------------|---|---|---|-----------|---------------------|--------|-----|---------------------------|
| | | | Down  | Center  | Up  | Resistive | | | | |
| | | | | | | AC 125V | AC 250V | DC 30V | | |
| S21AW | — | DPST | ON 1-3 4-6 | NONE | OFF — | 15A | 15A | 15A | 22° | |
| S6AW | — | DPDT | ON 2-3 5-6 | NONE | ON 2-1 5-4 | 20A | 10A | 20A | 22° | |
| S7AW | — | DPDT | ON 2-3 5-6 | OFF | ON 2-1 5-4 | 20A | 10A | 20A | 28° | |
| S25AW | — | DPDT | ON 2-3 5-6 | NONE | (ON) 2-1 5-4 | 15A | 6A | 20A | 20° | |
| S28AW | — | DPDT | (ON) 2-3 5-6 | OFF | (ON) 2-1 5-4 | 15A | 6A | 20A | 22° | |
| S29AW | — | DPDT | ON 2-3 5-6 | OFF | (ON) 2-1 5-4 | 15A | 6A | 20A | 22° | |

Throw & Schematics: DPST  INTERNAL CONNECTION  Note: Terminal numbers are actually on the switch

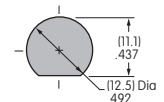
Notes: Standard Hardware: AT503M Face Hex Nut, Lockwasher, AT537 O-ring. See Accessories & Hardware section. For .250" Quick Connect terminals, add "F" to end of part number. See Quick Connect terminal dimensions on previous page. For further information, contact factory.



S6AW



S21AW does not have terminals 2 & 5



Maximum Panel Thickness: .158" (4.0mm)

SINGLE POLE SOLDER LUG WITH LOCKING LEVER & PANEL SEAL

| Model | Approvals | | Pole & Throw | Toggle Position/Connected Terminals | | | | Electrical Capacity | | | | $\alpha =$ Angle of Throw |
|-------|-----------|-------|--------------|-------------------------------------|--------|--------|-----------|---------------------|--------|--------------------------------|-----|------------------------------|
| | UL | cULus | | Down Keyway | Center | Up | Resistive | | | Inductive AC 125V PF 0.6 | | |
| | | | | | | | AC 125V | AC 250V | DC 30V | | | |
| S1AL | — | — | SPST | ON 1-3 | NONE | OFF — | 15A | 6A | 20A | 8A | 24° | |
| S2AL | — | — | SPDT | ON 2-3 | NONE | ON 2-1 | 15A | 6A | 20A | 8A | 24° | |
| S3AL | — | — | SPDT | ON 2-3 | OFF | ON 2-1 | 15A | 6A | 20A | 8A | 28° | |

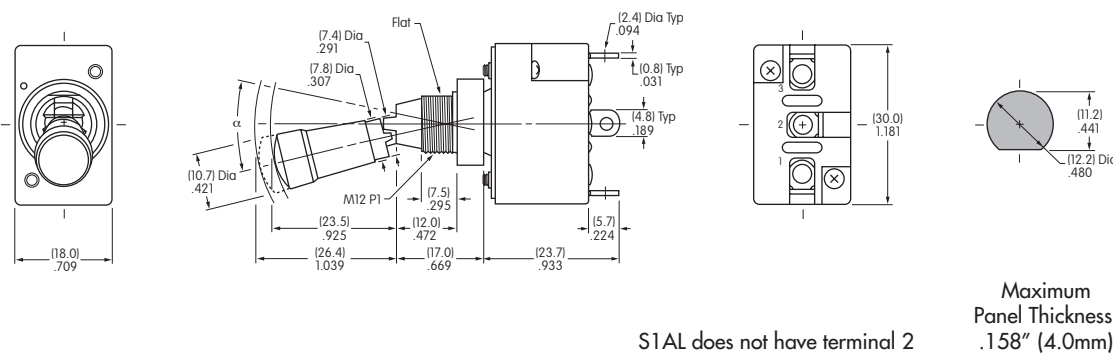
Throw & Schematics:

SPST: INTERNAL CONNECTION

SPDT: 2 (COM)

Note: Terminal numbers are actually on the switch

Notes: Standard Hardware: AT503M Face Hex Nut, Lockwasher, AT537 O-ring. See Accessories & Hardware section.



DOUBLE POLE SOLDER LUG WITH LOCKING LEVER & PANEL SEAL

* UL & cULus recognized only when ordered with marking on switch (see General Specs)

| Model | Approvals | | Pole & Throw | Toggle Position/Connected Terminals | | | | Electrical Capacity | | | | $\alpha =$ Angle of Throw |
|-------|-----------|-------|--------------|-------------------------------------|--------|------------|-----------|---------------------|--------|--------------------------------|-----|------------------------------|
| | UL | cULus | | Down Keyway | Center | Up | Resistive | | | Inductive AC 125V PF 0.6 | | |
| | | | | | | | AC 125V | AC 250V | DC 30V | | | |
| S21AL | — | — | DPST | ON 1-3 4-6 | NONE | OFF — | 15A | 15A | 15A | 8A | 22° | |
| S6AL | ✓ | ✓ | DPDT | ON 2-3 5-6 | NONE | ON 2-1 5-4 | 20A | 10A | 20A | 8A | 22° | |
| S7AL | — | — | DPDT | ON 2-3 5-6 | OFF | ON 2-1 5-4 | 20A | 10A | 20A | 8A | 28° | |

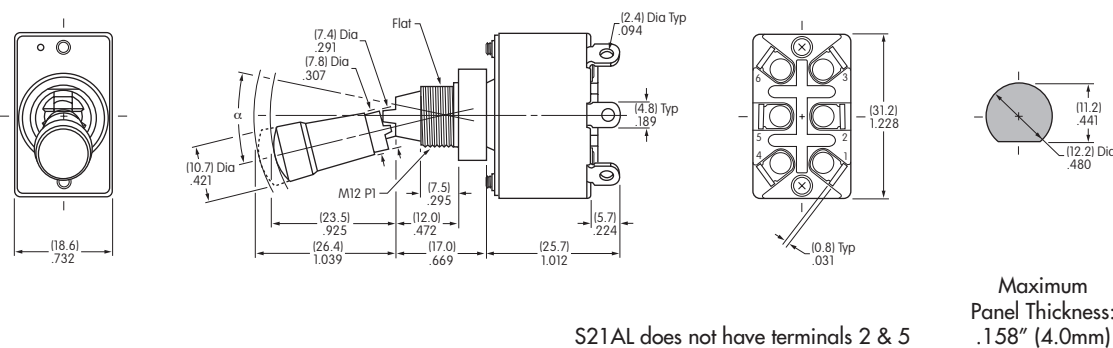
Throw & Schematics:

DPST: INTERNAL CONNECTION

DPDT: 2 (COM)

Note: Terminal numbers are actually on the switch

Notes: Standard Hardware: AT503M Face Hex Nut, Lockwasher, AT537 O-ring. See Accessories & Hardware section.



GENERAL SPECIFICATIONS FOR S301 ~ S339

Toggles
A

Rockers

Pushbuttons

Illuminated PB

Programmable

Keylocks

Rotaries

Slides

Tactiles

Tilt

Touch

Indicators

Accessories

Supplement

Electrical Capacity (Resistive & Inductive Load)

Power Level: Shown in the following tables

Other Ratings

| | |
|--|--|
| Contact Resistance: | 10 milliohms maximum |
| Insulation Resistance: | 1,000 megohms minimum @ 500V DC |
| Dielectric Strength: | 2,000V AC minimum for 1 minute minimum |
| Mechanical Life: | 50,000 operations minimum |
| Electrical Life: | 6,000 operations minimum for S331F; 15,000 operations minimum for all other S331s; 25,000 operations minimum for all others |
| Angle of Throw (α): | Shown on following tables |

Materials & Finishes

| | |
|---|---|
| Toggle: | PBT for flatted lever; brass with chrome plating for all others |
| Bushing: | Brass with chrome plating |
| Case: | Melamine phenol |
| Case Cover: | Steel with zinc plating |
| Movable Contactor: | Copper with silver plating |
| Movable & Stationary Contacts: | Silver alloy capped on copper with silver plating |
| Terminals: | Brass with tin plating |

Environmental Data

Operating Temperature Range: $-10^{\circ}\text{C} \sim +70^{\circ}\text{C}$ ($+14^{\circ}\text{F} \sim +158^{\circ}\text{F}$)

Installation

Mounting Torque: 2.94Nm (26 lb•in) for double nut; 1.47Nm (13 lb•in) for single nut
Soldering Time & Temperature: Manual Soldering: See Profile A in Supplement section.

Standards & Certifications

UL: File No. E44145 - Recognized only when ordered with marking on switch.
 Add "/U" or "/CUL" to end of part number to order UL recognized switch.
 UL or cULus recognition designated beside part numbers on following pages.
 See Supplement section to find UL or cULus rating details.

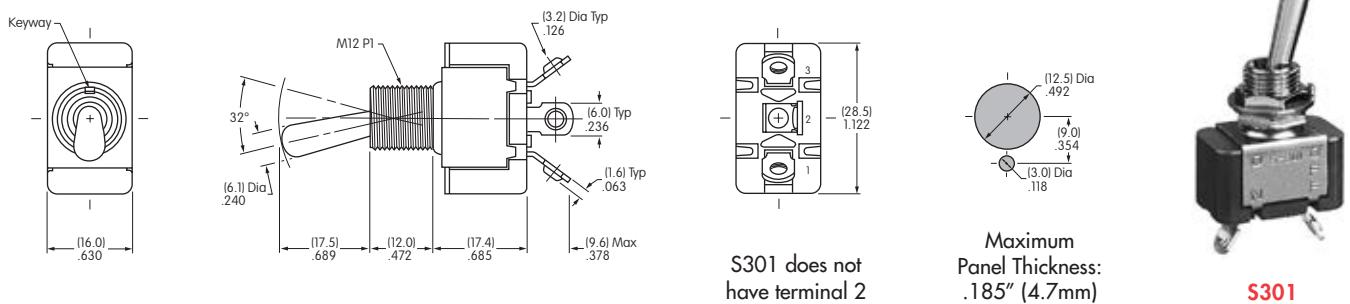
CSA: File No. 023535_0_000 - Certified only when ordered with marking on switch.
 Add "/C" to end of part number to order CSA certified switch.
 CSA certification designated beside part numbers on following pages.
 See Supplement section to find CSA rating details

SINGLE POLE WITH SOLDER LUG

| * UL, cULus & CSA recognized only when ordered with marking on switch (see General Specs) | | | Toggle Position/Connected Terminals () = Momentary | | | | | | Electrical Capacity | | | |
|---|-------------|-------|--|--------------|----------------|--------|----------|-----------|---------------------|--------|--------------------------------|----------------|
| Model | * Approvals | | | Pole & Throw | Down Keyway | Center | Up | Resistive | | | Inductive AC 125V PF 0.6 | Angle of Throw |
| | UL | cULus | CSA | | | | | AC 125V | AC 250V | DC 30V | | |
| S301 | ✓ | ✓ | ✓ | SPST | ON 1-3 | NONE | OFF — | 15A | 6A | 20A | 10A | 32° |
| S302 | ✓ | ✓ | ✓ | SPDT | ON 2-3 | NONE | ON 2-1 | 15A | 6A | 20A | 10A | 32° |
| S303 | ✓ | ✓ | ✓ | SPDT | ON 2-3 | OFF | ON 2-1 | 15A | 6A | 20A | 10A | 32° |
| S305 | — | — | ✓ | SPDT | ON 2-3 | NONE | (ON) 2-1 | 15A | 6A | 20A | 8A | 32° |
| S308 | — | — | ✓ | SPDT | (ON) 2-3 | OFF | (ON) 2-1 | 15A | 6A | 20A | 8A | 32° |
| S309 | — | — | ✓ | SPDT | ON 2-3 | OFF | (ON) 2-1 | 15A | 6A | 20A | 8A | 32° |

Throw & Schematics: SPST INTERNAL CONNECTION SPDT Note: Terminal numbers are actually on the switch

Notes: Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.
Optional Splashproof Boot Assemblies: AT401 & AT4181 boots plus hex nut & o-ring. See Accessories & Hardware section.

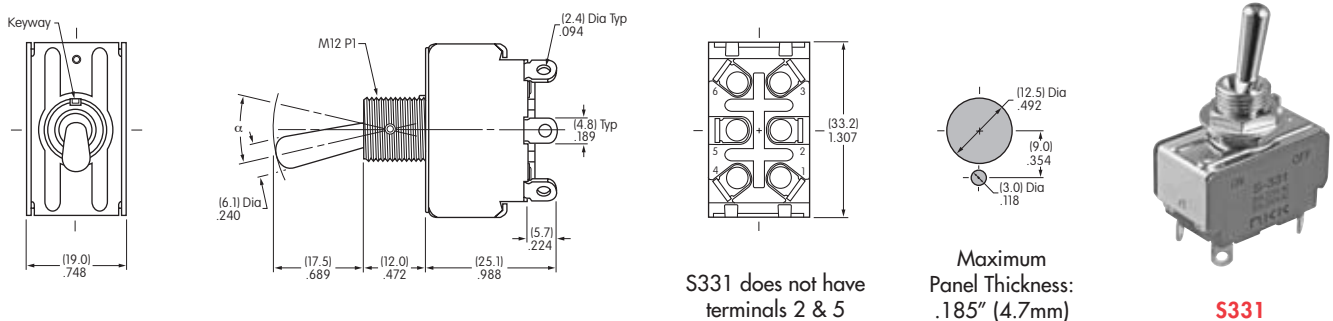


DOUBLE POLE WITH SOLDER LUG




| * UL, cULus & CSA recognized only when ordered with marking on switch (see General Specs) | | | Toggle Position/Connected Terminals () = Momentary | | | | | | Electrical Capacity | | | |
|---|-------------|-------|--|--------------|----------------|--------|--------------|-----------|---------------------|--------|--------------------------------|--------------------|
| Model | * Approvals | | | Pole & Throw | Down Keyway | Center | Up | Resistive | | | Inductive AC 125V PF 0.6 | α = Angle of Throw |
| | UL | cULus | CSA | | | | | AC 125V | AC 250V | DC 30V | | |
| S331 | ✓ | ✓ | ✓ | DPST | ON 1-3 4-6 | NONE | OFF — | 20A | 20A | 20A | 10A | 25° |
| S332 | ✓ | ✓ | ✓ | DPDT | ON 2-3 5-6 | NONE | ON 2-1 5-4 | 20A | 15A | 20A | 10A | 25° |
| S333 | ✓ | ✓ | ✓ | DPDT | ON 2-3 5-6 | OFF | ON 2-1 5-4 | 20A | 15A | 20A | 10A | 30° |
| S335 | ✓ | ✓ | ✓ | DPDT | ON 2-3 5-6 | NONE | (ON) 2-1 5-4 | 15A | 6A | 20A | 8A | 25° |
| S338 | ✓ | ✓ | — | DPDT | (ON) 2-3 5-6 | OFF | (ON) 2-1 5-4 | 15A | 6A | 20A | 8A | 25° |
| S339 | ✓ | ✓ | — | DPDT | ON 2-3 5-6 | OFF | (ON) 2-1 5-4 | 15A | 6A | 20A | 8A | 25° |

Throw & Schematics: DPST INTERNAL CONNECTION DPDT Note: Terminal numbers are actually on the switch

Notes: Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.
Optional Splashproof Boot Assemblies: AT401 & AT4181 boots plus hex nut & o-ring. See Accessories & Hardware section.



DOUBLE POLE WITH SOLDER LUG & FLATTED LEVER

| Model | * Approvals | | | Pole & Throw | Toggle Position/Connected Terminals () = Momentary | | | | | | Electrical Capacity | | | |
|-------|-------------|-------|----|--------------|---|---|---|-----------|---------|--------|---------------------|---------------------------|--|--|
| | UL | cULus | CS | | Down  | Center  | Up  | Resistive | | | Inductive | α = Angle of Throw | | |
| | | | | | | | | AC 125V | AC 250V | DC 30V | AC 125V PF 0.6 | | | |
| S331R | ✓ | ✓ | — | DPST | ON 1-3 4-6 | NONE | OFF — | 20A | 20A | 20A | 10A | 25° | | |
| S332R | ✓ | ✓ | — | DPDT | ON 2-3 5-6 | NONE | ON 2-1 5-4 | 20A | 15A | 20A | 10A | 25° | | |
| S333R | ✓ | ✓ | — | DPDT | ON 2-3 5-6 | OFF | ON 2-1 5-4 | 20A | 15A | 20A | 10A | 30° | | |
| S338R | ✓ | ✓ | — | DPDT | (ON) 2-3 5-6 | OFF | (ON) 2-1 5-4 | 15A | 6A | 20A | 8A | 25° | | |
| S339R | ✓ | ✓ | — | DPDT | ON 2-3 5-6 | OFF | (ON) 2-1 5-4 | 15A | 6A | 20A | 8A | 25° | | |

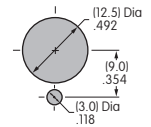
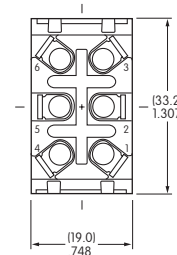
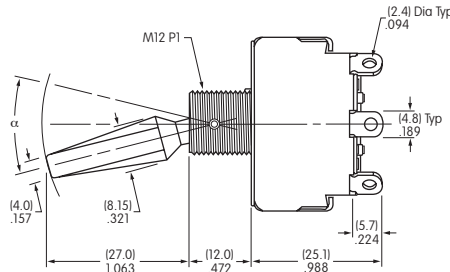
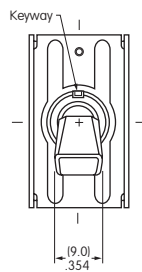


Note: Terminal numbers are actually on the switch

Notes: Standard Hardware: AT504M Knurled Nut, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.






S331R





S331R does not have terminals 2 & 5

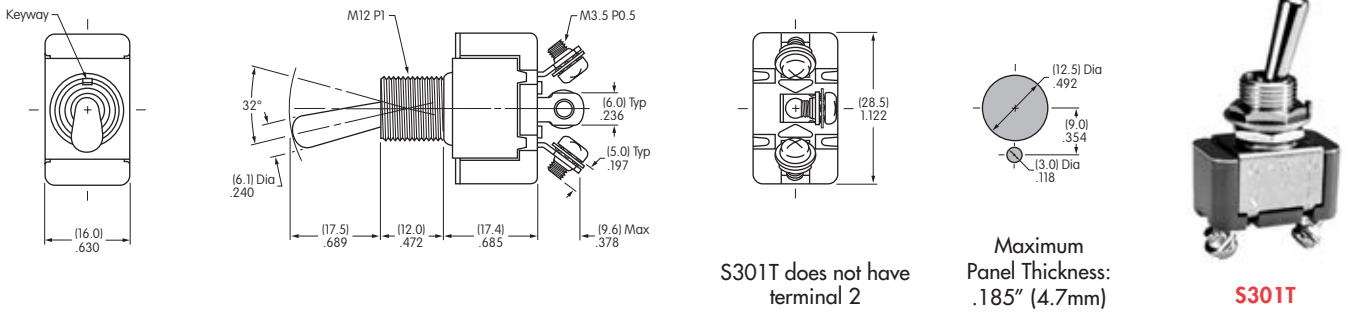
Maximum Panel Thickness: .220" (5.6mm)

SINGLE POLE WITH SCREW LUG




| * UL, cULus & CSA recognized only when ordered with marking on switch (see General Specs) | | | Toggle Position/Connected Terminals () = Momentary | | | | | Electrical Capacity | | | | α = Angle of Throw |
|---|-------------|-------|--|--------------|---|---|---|---------------------|---------|--------|----------------|---------------------------|
| Model | * Approvals | | | Pole & Throw | Down  | Center  | Up  | Resistive | | | Inductive | |
| | UL | cULus | CSA | | | | | AC 125V | AC 250V | DC 30V | AC 125V PF 0.6 | |
| S301T | ✓ | ✓ | ✓ | SPST | ON 1-3 | NONE | OFF — | 15A | 6A | 20A | 10A | 32° |
| S302T | ✓ | ✓ | ✓ | SPDT | ON 2-3 | NONE | ON 2-1 | 15A | 6A | 20A | 10A | 32° |
| S303T | ✓ | ✓ | ✓ | SPDT | ON 2-3 | OFF | ON 2-1 | 15A | 6A | 20A | 10A | 32° |
| S305T | — | — | ✓ | SPDT | ON 2-3 | NONE | (ON) 2-1 | 15A | 6A | 20A | 8A | 32° |
| S308T | — | — | ✓ | SPDT | (ON) 2-3 | OFF | (ON) 2-1 | 15A | 6A | 20A | 8A | 32° |
| S309T | — | — | ✓ | SPDT | ON 2-3 | OFF | (ON) 2-1 | 15A | 6A | 20A | 8A | 32° |

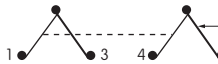
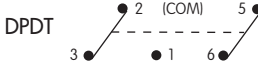
Throw & Schematics: SPST  INTERNAL CONNECTION  Note: Terminal numbers are actually on the switch

Notes: Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section. Optional Splashproof Boot Assemblies: AT401 & AT4181 boots plus hex nut & o-ring. See Accessories & Hardware section.

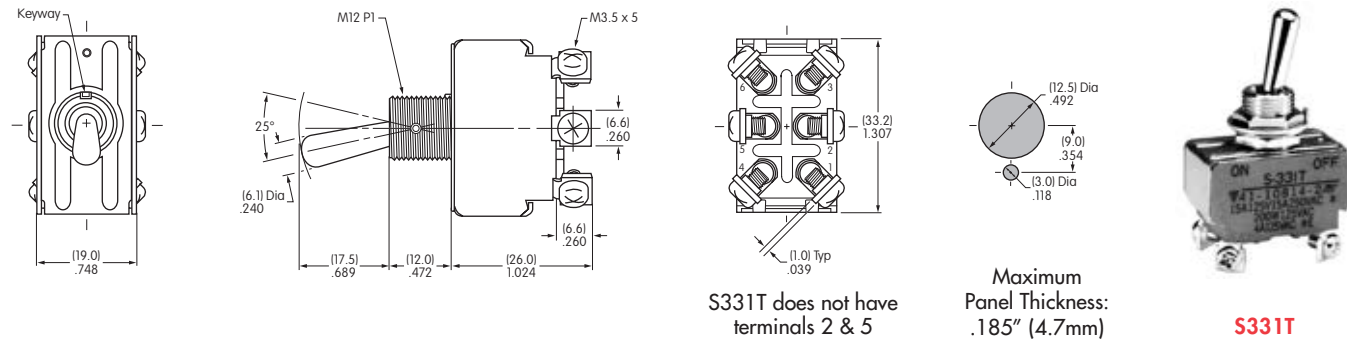


DOUBLE POLE WITH SCREW LUG

| * UL & cULus recognized only when ordered with marking on switch (see General Specs) | | | Toggle Position/Connected Terminals () = Momentary | | | | | Electrical Capacity | | | | α = Angle of Throw |
|--|-------------|-------|--|--------------|---|---|---|---------------------|---------|--------|----------------|---------------------------|
| Model | * Approvals | | | Pole & Throw | Down  | Center  | Up  | Resistive | | | Inductive | |
| | UL | cULus | CSA | | | | | AC 125V | AC 250V | DC 30V | AC 125V PF 0.6 | |
| S331T | ✓ | ✓ | — | DPST | ON 1-3 4-6 | NONE | OFF — | 15A | 15A | 15A | 10A | 25° |
| S332T | ✓ | ✓ | — | DPDT | ON 2-3 5-6 | NONE | ON 2-1 5-4 | 15A | 15A | 15A | 10A | 25° |
| S333T | ✓ | ✓ | — | DPDT | ON 2-3 5-6 | OFF | ON 2-1 5-4 | 15A | 15A | 15A | 10A | 30° |
| S335T | ✓ | ✓ | — | DPDT | ON 2-3 5-6 | NONE | (ON) 2-1 5-4 | 15A | 6A | 20A | 8A | 25° |
| S338T | ✓ | ✓ | — | DPDT | (ON) 2-3 5-6 | OFF | (ON) 2-1 5-4 | 15A | 6A | 20A | 8A | 25° |
| S339T | ✓ | ✓ | — | DPDT | ON 2-3 5-6 | OFF | (ON) 2-1 5-4 | 15A | 6A | 20A | 8A | 25° |

Throw & Schematics: DPST  INTERNAL CONNECTION  Note: Terminal numbers are actually on the switch

Notes: Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section. Optional Splashproof Boot Assemblies: AT401 & AT4181 boots plus hex nut & o-ring. See Accessories & Hardware section.



Toggles **A**

Rockers

Pushbuttons

Illuminated PB

Programmable PB

Keylocks

Rotaries

Slides

Tactiles

Tilt

Touch

Indicators

Accessories

Supplement

SINGLE POLE WITH QUICK CONNECT

| * UL, cULus & CSA recognized only when ordered with marking on switch (see General Specs) | | | | Toggle Position/Connected Terminals | | | | Electrical Capacity | | | | α = Angle of Throw |
|---|-------------|-------|-----|-------------------------------------|--------|--------|-------|---------------------|---------|--------|----------------|--------------------|
| Model | * Approvals | | | Pole & Throw | Down | Center | Up | Resistive | | | Inductive | |
| | UL | cULus | CSA | | Keyway | | | AC 125V | AC 250V | DC 30V | AC 125V PF 0.6 | |
| S301F | ✓ | ✓ | ✓ | SPST | ON 1-3 | NONE | OFF — | 15A | 6A | 20A | 10A | 32° |

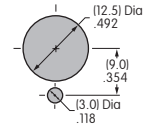
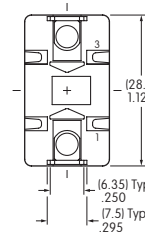
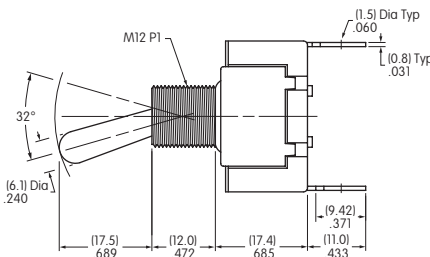
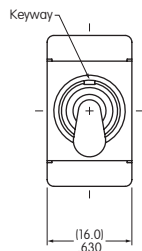
Throw & Schematics: SPST INTERNAL CONNECTION

Note: Terminal numbers are actually on the switch

Notes: Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section. Optional Splashproof Boot Assemblies: AT401 & AT4181 boots plus hex nut & o-ring. See Accessories & Hardware section.



S301F



Maximum Panel Thickness: .185" (4.7mm)

DOUBLE POLE WITH QUICK CONNECT

| * UL & cULus recognized only when ordered with marking on switch (see General Specs) | | | | Toggle Position/Connected Terminals () = Momentary | | | | Electrical Capacity | | | | α = Angle of Throw |
|--|-------------|-------|-----|---|------------|--------|--------------|---------------------|---------|--------|----------------|--------------------|
| Model | * Approvals | | | Pole & Throw | Down | Center | Up | Resistive | | | Inductive | |
| | UL | cULus | CSA | | Keyway | | | AC 125V | AC 250V | DC 30V | AC 125V PF 0.6 | |
| S331F | ✓ | ✓ | — | DPST | ON 1-3 4-6 | NONE | OFF — | 20A | 20A | 20A | 10A | 25° |
| S332F | ✓ | ✓ | — | DPDT | ON 2-3 5-6 | NONE | ON 2-1 5-4 | 20A | 15A | 20A | 10A | 25° |
| S333F | ✓ | ✓ | — | DPDT | ON 2-3 5-6 | OFF | ON 2-1 5-4 | 20A | 15A | 20A | 10A | 30° |
| S335F | ✓ | ✓ | — | DPDT | ON 2-3 5-6 | NONE | (ON) 2-1 5-4 | 15A | 6A | 20A | 8A | 25° |

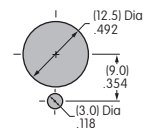
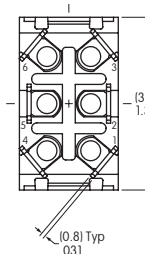
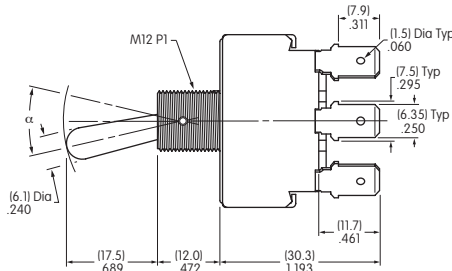
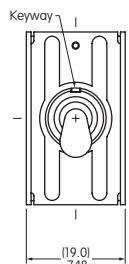
Throw & Schematics: DPST INTERNAL CONNECTION DPDT

Note: Terminal numbers are actually on the switch

Notes: Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section. Optional Splashproof Boot Assemblies: AT401 & AT4181 boots plus hex nut & o-ring. See Accessories & Hardware section.



S332F



Maximum Panel Thickness: .185" (4.7mm)

S331F does not have terminals 2 & 5

GENERAL SPECIFICATIONS FOR S31 ~ S49

Electrical Capacity (Resistive & Inductive Load)

Power Level: Shown in the following tables

Other Ratings

Contact Resistance: 10 milliohms maximum

Insulation Resistance: 1,000 megohms minimum @ 500V DC

Dielectric Strength: 2,000V AC minimum for 1 minute minimum

Mechanical Life: 50,000 operations minimum

Electrical Life: 25,000 operations minimum for all models (Resistive Load)

6,000 operations minimum for S31, S32, S33, S31F, S32F, S33F, S31T, S32T, S33T; S41/S41R, S42/S42R, S43/S43R, S41F, S42F, S43F, S41T, S42T, S43T (Inductive Load)

Angle of Throw (α): Shown on following tables

Materials & Finishes

Toggle: PBT resin for flatted lever; brass with chrome plating for all others

Bushing: Brass with chrome plating

Case: Phenolic resin

Case Cover: Steel with chromate plating over zinc plating

Movable Contactor: Copper with silver plating

Movable Contacts: Silver alloy capped on copper with silver plating

Stationary Contacts: Silver alloy capped on copper with silver plating

Terminals: Brass with tin plating

Environmental Data

Operating Temp Range: -10°C through +70°C (+14°F through +158°F)

Installation

Mounting Torque: 2.94Nm (26 lb•in) for double nut

Maximum Panel Thickness: Shown beneath panel cutout in switch dimension drawings

Soldering Time & Temperature: Manual Soldering: See Profile A in Supplement section.

Standards & Certifications

UL: File No. E44145 - Recognized only when ordered with marking on switch. Add "/U" or "/CUL" to end of part number to order UL recognized switch. UL or cULus recognition designated beside part numbers on following pages. See Supplement section to find UL or cULus rating details.

CSA: File No. 023535_0_000 - Certified only when ordered with marking on switch. Add "/C" to end of part number to order CSA certified switch. CSA certification designated beside part numbers on following pages. See Supplement section to find CSA rating details.

A
Toggles

Rockers

Pushbuttons

Illuminated PB

Programmable

Keylocks

Rotaries

Slides

Tactiles

Tilt

Touch

Indicators

Accessories

Supplement

Toggles
A

THREE POLE WITH SOLDER LUG

| Model | * Approvals | | | Pole & Throw | Toggle Position/Connected Terminals () = Momentary | | | | | | Electrical Capacity | | | |
|-------|-------------|-------|-----|--------------|--|-------------|------|-----------|-------------|--------|--------------------------------|---------------------------------|-----|-----|
| | UL | cULus | CSA | | Down Keyway | Center | Up | Resistive | | | Inductive AC 125V PF 0.6 | $\alpha =$ Angle of Throw | | |
| | | | | | | | | AC 125V | AC 250V | DC 30V | | | | |
| S31 | ✓ | ✓ | ✓ | 3PST | ON | 1-3 4-6 7-9 | NONE | OFF | — | 20A | 9A | 20A | 10A | 25° |
| S32 | ✓ | ✓ | ✓ | 3PDT | ON | 2-3 5-6 8-9 | NONE | ON | 2-1 5-4 8-7 | 20A | 9A | 20A | 10A | 25° |
| S33 | ✓ | ✓ | ✓ | 3PDT | ON | 2-3 5-6 8-9 | OFF | ON | 2-1 5-4 8-7 | 20A | 9A | 20A | 10A | 30° |
| S35 | ✓ | ✓ | ✓ | 3PDT | ON | 2-3 5-6 8-9 | NONE | (ON) | 2-1 5-4 8-7 | 15A | 6A | 20A | 8A | 25° |
| S38 | ✓ | ✓ | ✓ | 3PDT | (ON) | 2-3 5-6 8-9 | OFF | (ON) | 2-1 5-4 8-7 | 15A | 6A | 15A | 8A | 25° |
| S39 | ✓ | ✓ | ✓ | 3PDT | ON | 2-3 5-6 8-9 | OFF | (ON) | 2-1 5-4 8-7 | 15A | 6A | 15A | 8A | 25° |

Throw & Schematics:

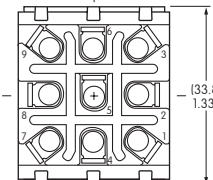
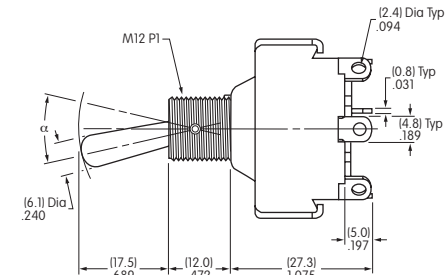
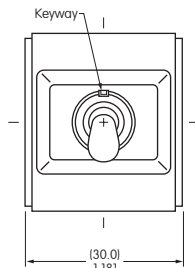


Note: Terminal numbers are on the switch

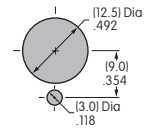
Notes: Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section. Optional Splashproof Boot Assemblies: AT401 & AT4181 boots plus hex nut & o-ring. See Accessories & Hardware section.



S32



S31 does not have terminals 2, 5, & 8



Maximum Panel Thickness: .181" (4.6mm)

FOUR POLE WITH SOLDER LUG

| Model Suffix R = Flatted Lever | * Approvals | | | Pole & Throw | Toggle Position/Connected Terminals () = Momentary | | | | | | Electrical Capacity | | | |
|--------------------------------------|-------------|-------|-----|--------------|--|-------------------|------|-----------|-------------------|--------|--------------------------------|---------------------------------|-----|-----|
| | UL | cULus | CSA | | Down Keyway | Center | Up | Resistive | | | Inductive AC 125V PF 0.6 | $\alpha =$ Angle of Throw | | |
| | | | | | | | | AC 125V | AC 250V | DC 30V | | | | |
| S41/S41R | ✓ | ✓ | ✓ | 4PST | ON | 1-3 4-6 7-9 10-12 | NONE | OFF | — | 20A | 9A | 20A | 10A | 25° |
| S42/S42R | ✓ | ✓ | ✓ | 4PDT | ON | 2-3 5-6 8-9 11-12 | NONE | ON | 2-1 5-4 8-7 11-10 | 20A | 9A | 20A | 10A | 25° |
| S43/S43R | ✓ | ✓ | ✓ | 4PDT | ON | 2-3 5-6 8-9 11-12 | OFF | ON | 2-1 5-4 8-7 11-10 | 20A | 9A | 20A | 10A | 30° |
| S45 | — | ✓ | — | 4PDT | ON | 2-3 5-6 8-9 11-12 | NONE | (ON) | 2-1 5-4 8-7 11-10 | 15A | 6A | 20A | 8A | 25° |
| S48/S48R | ✓ | ✓ | — | 4PDT | (ON) | 2-3 5-6 8-9 11-12 | OFF | (ON) | 2-1 5-4 8-7 11-10 | 15A | 6A | 20A | 8A | 25° |
| S49/S49R | ✓ | ✓ | — | 4PDT | ON | 2-3 5-6 8-9 11-12 | OFF | (ON) | 2-1 5-4 8-7 11-10 | 15A | 6A | 20A | 8A | 25° |

Throw & Schematics:



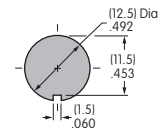
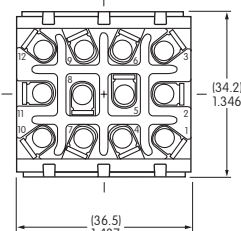
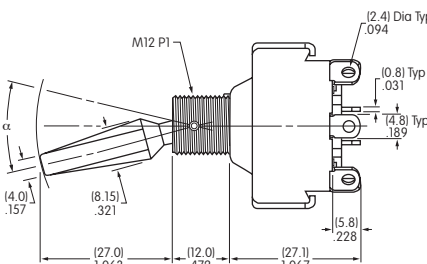
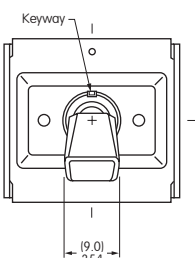
Note: Terminal numbers are on the switch

Notes: Standard Hardware for **Bat Lever**: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut; for **Flatted Lever (R)**: AT504M Knurled Face Nut, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section. Optional Splashproof Boot Assemblies (only for bat lever models): AT401 & AT4181 boots plus hex nut and o-ring. See Accessories & Hardware section.

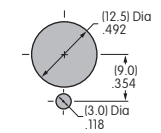


S41R

Bat lever dimensions are same as on S30 models above. S41 and S41R do not have terminals 2, 5, 8, & 11.



Max. Panel Thickness: .220" (5.6mm)



Max. Panel Thickness: .181" (4.6mm)

Rockers

Pushbuttons

Illuminated PB

Programmable

Keylocks

Rotaries

Slides

Tactiles

Tilt







Touch

Indicators


Accessories


Supplement

THREE POLE WITH SCREW LUG

| * UL, cULus & CSA recognized only when ordered with marking on switch (see General Specs) | | | Toggle Position/Connected Terminals | | | | | | Electrical Capacity | | | | |
|---|---|---|---|--------------|---|---|---|-----------|---------------------|--------|----------------|----------------|------------------------------|
| Model | * Approvals | | | Pole & Throw | Down  | Center  | Up  | Resistive | | | Inductive | | $\alpha =$ Angle of Throw |
| |  |  |  | | | | | AC 125V | AC 250V | DC 30V | AC 125V PF 0.6 | AC 250V PF 0.6 | |
| S31T | ✓ | ✓ | ✓ | 3PST | ON 1-3 4-6 7-9 | NONE | OFF — | 20A | 9A | 20A | 10A | 5A | 25° |
| S32T | ✓ | ✓ | ✓ | 3PDT | ON 2-3 5-6 8-9 | NONE | ON 2-1 5-4 8-7 | 20A | 9A | 20A | 10A | 5A | 25° |
| S33T | ✓ | ✓ | ✓ | 3PDT | ON 2-3 5-6 8-9 | OFF | ON 2-1 5-4 8-7 | 20A | 9A | 20A | 10A | 5A | 30° |

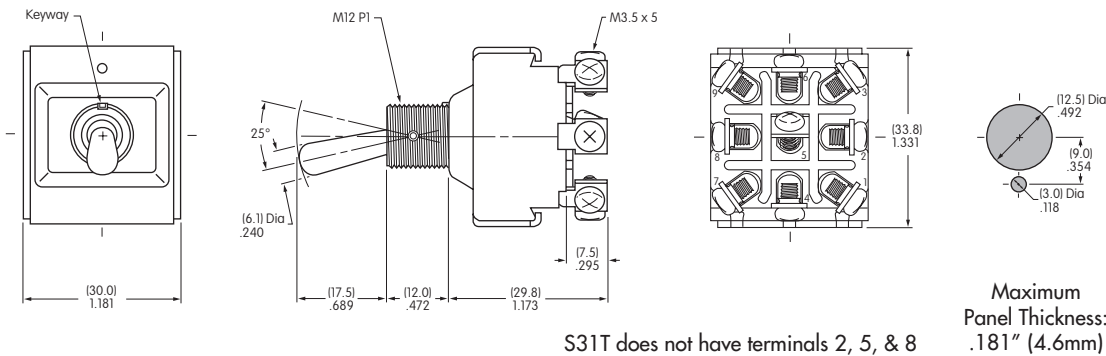
Throw & Schematics:

3PST:  INTERNAL CONNECTION







3PDT:  (COM) 8

Note: Terminal numbers are on the switch


Notes: Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.
Optional Splashproof Boot Assemblies: AT401 & AT4181 boots plus hex nut & o-ring. See Accessories & Hardware section.




FOUR POLE WITH SCREW LUG

| * UL, cULus & CSA recognized only when ordered with marking on switch (see General Specs) | | | Toggle Position/Connected Terminals | | | | | | Electrical Capacity | | | | |
|---|---|---|---|--------------|---|---|---|-----------|---------------------|--------|----------------|----------------|------------------------------|
| Model | * Approvals | | | Pole & Throw | Down  | Center  | Up  | Resistive | | | Inductive | | $\alpha =$ Angle of Throw |
| |  |  |  | | | | | AC 125V | AC 250V | DC 30V | AC 125V PF 0.6 | AC 250V PF 0.6 | |
| S41T | ✓ | ✓ | ✓ | 4PST | ON 1-3 4-6 7-9 10-12 | NONE | OFF — | 20A | 9A | 20A | 10A | 5A | 25° |
| S42T | ✓ | ✓ | ✓ | 4PDT | ON 2-3 5-6 8-9 11-12 | NONE | ON 2-1 5-4 8-7 11-10 | 20A | 9A | 20A | 10A | 5A | 25° |
| S43T | ✓ | ✓ | ✓ | 4PDT | ON 2-3 5-6 8-9 11-12 | OFF | ON 2-1 5-4 8-7 11-10 | 20A | 9A | 20A | 10A | 5A | 30° |

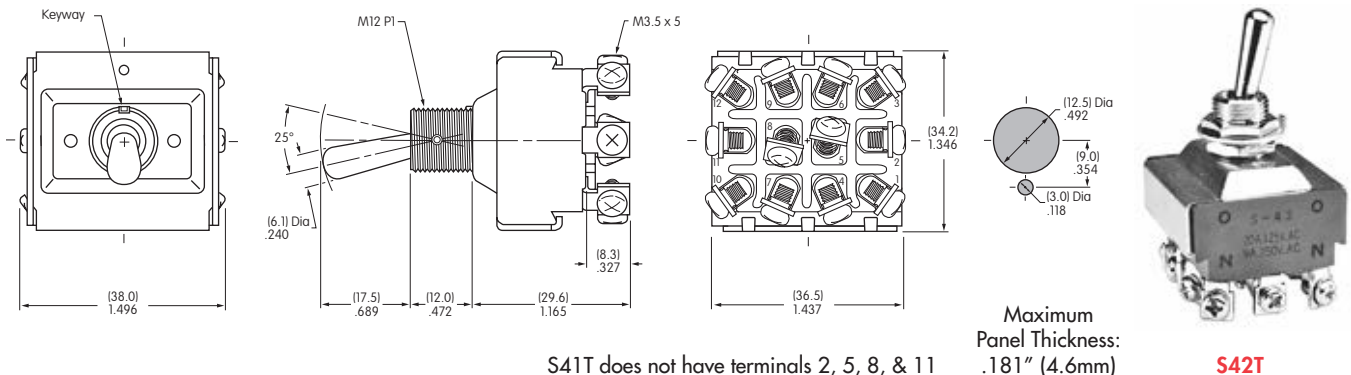
Throw & Schematics:

4PST:  INTERNAL CONNECTION

4PDT:  (COM) 8

Note: Terminal numbers are on the switch

Notes: Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.
Optional Splashproof Boot Assemblies: AT401 & AT4181 boots plus hex nut & o-ring. See Accessories & Hardware section.



THREE POLE WITH QUICK CONNECT

| * UL, cULus & CSA recognized only when ordered with marking on switch (see General Specs) | | | | Toggle Position/Connected Terminals | | | | | | Electrical Capacity | | | |
|---|-------------|---|---|-------------------------------------|----------------|--------|----------------|-----------|---------|---------------------|----------------|------------------------------|--|
| Model | * Approvals | | | Pole & Throw | Down | Center | Up | Resistive | | | Inductive | $\alpha =$ Angle of Throw | |
| | | | | | | | | AC 125V | AC 250V | DC 30V | AC 125V PF 0.6 | | |
| S31F | ✓ | ✓ | ✓ | 3PST | ON 1-3 4-6 7-9 | NONE | OFF | 20A | 9A | 20A | 10A | 25° | |
| S32F | ✓ | ✓ | ✓ | 3PDT | ON 2-3 5-6 8-9 | NONE | ON 2-1 5-4 8-7 | 20A | 9A | 20A | 10A | 25° | |
| S33F | ✓ | ✓ | ✓ | 3PDT | ON 2-3 5-6 8-9 | OFF | ON 2-1 5-4 8-7 | 20A | 9A | 20A | 10A | 30° | |

Throw & Schematics:

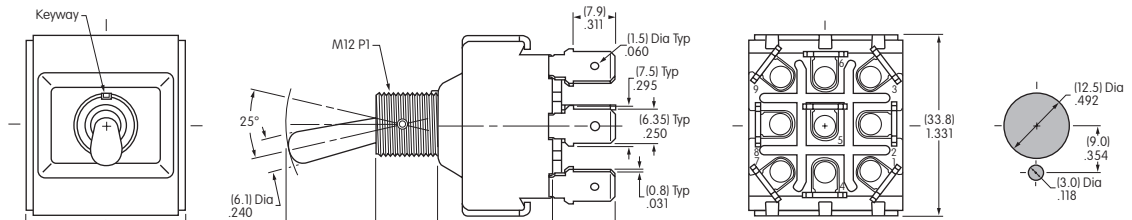


Note: Terminal numbers are on the switch

Notes: Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section. Optional Splashproof Boot Assemblies: AT401 & AT4181 boots plus hex nut & o-ring. See Accessories & Hardware section.



S31F



S31F does not have terminals 2, 5, & 8

Maximum Panel Thickness: .181" (4.6mm)

FOUR POLE WITH QUICK CONNECT

| * UL, cULus & CSA recognized only when ordered with marking on switch (see General Specs) | | | | Toggle Position/Connected Terminals | | | | | | Electrical Capacity | | | |
|---|-------------|---|---|-------------------------------------|----------------------|--------|----------------------|-----------|---------|---------------------|----------------|------------------------------|--|
| Model | * Approvals | | | Pole & Throw | Down | Center | Up | Resistive | | | Inductive | $\alpha =$ Angle of Throw | |
| | | | | | | | | AC 125V | AC 250V | DC 30V | AC 125V PF 0.6 | | |
| S41F | ✓ | ✓ | ✓ | 4PST | ON 1-3 4-6 7-9 10-12 | NONE | OFF | 20A | 9A | 20A | 10A | 25° | |
| S42F | ✓ | ✓ | ✓ | 4PDT | ON 2-3 5-6 8-9 11-12 | NONE | ON 2-1 5-4 8-7 11-10 | 20A | 9A | 20A | 10A | 25° | |
| S43F | ✓ | ✓ | ✓ | 4PDT | ON 2-3 5-6 8-9 11-12 | OFF | ON 2-1 5-4 8-7 11-10 | 20A | 9A | 20A | 10A | 30° | |

Throw & Schematics:

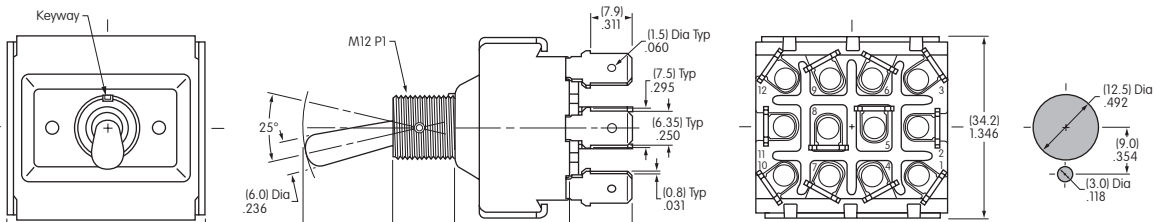


Note: Terminal numbers are on the switch

Notes: Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section. Optional Splashproof Boot Assemblies: AT401 & AT4181 boots plus hex nut & o-ring. See Accessories & Hardware section.



S42F



S41F does not have terminals 2, 5, 8, & 11

Maximum Panel Thickness: .181" (4.6mm)

GENERAL SPECIFICATIONS FOR S421 ~ S429

Electrical Capacity (Resistive & Inductive Load)

Power Level: Shown in the following tables

Other Ratings

Contact Resistance: 10 milliohms maximum
Insulation Resistance: 1,000 megohms minimum @ 500V DC
Dielectric Strength: 2,000V AC minimum for 1 minute minimum
Mechanical Life: 50,000 operations minimum
Electrical Life: 15,000 operations minimum
Angle of Throw (α): Shown in tables on following pages

Materials & Finishes

Toggle: Brass with chrome plating
Bushing: Brass with chrome plating
Case: Melamine phenol
Case Cover: Steel with chromate plating over zinc plating
Movable Contactor: Copper with silver plating
Movable Contacts: Silver alloy capped on copper with silver plating
Stationary Contacts: Silver alloy capped on copper with silver plating
Terminals: Brass with tin plating

Environmental Data

Operating Temp Range: -10°C through +70°C (+14°F through +158°F)

Installation

Mounting Torque: 2.94Nm (26 lb·in) for double nut
Maximum Panel Thickness: Shown beneath panel cutout in switch dimension drawings
Soldering Time & Temperature: Manual Soldering: See Profile A in Supplement section.

A
Toggles

Rockers

Pushbuttons

Illuminated PB

Programmable

Keylocks

Rotaries

Slides

Tactiles

Tilt

Touch




Indicators

Accessories

Supplement

Toggles
A

DOUBLE POLE WITH SOLDER LUG

| Model | Approvals | | Pole & Throw | Toggle Position/Connected Terminals () = Momentary | | | | | | Electrical Capacity | | | | |
|-------|-----------|----|--------------|---|---|---|-----------|---------|--------------------------|---------------------|-----------------------|---------------------------|------|-----|
| | UL | CS | | Down  | Center  | Up  | Resistive | | Inductive | | Motor Load AC 125V | α = Angle of Throw | | |
| | | | | | | | AC 125V | AC 250V | PF 0.75 - 0.8 AC 125V | AC 250V | | | | |
| S421 | — | — | DPST | ON | 1-3 4-6 | NONE | OFF | — | 20A | 20A | 20A | 20A | 750W | 24° |
| S422 | — | — | DPDT | ON | 2-3 5-6 | NONE | ON | 2-1 5-4 | 20A | 20A | 20A | 20A | 750W | 24° |
| S423 | — | — | DPDT | ON | 2-3 5-6 | OFF | ON | 2-1 5-4 | 20A | 20A | 20A | 20A | 750W | 28° |
| S425 | — | — | DPDT | ON | 2-3 5-6 | NONE | (ON) | 2-1 5-4 | 15A | 15A | 15A | 15A | 400W | 24° |
| S428 | — | — | DPDT | (ON) | 2-3 5-6 | OFF | (ON) | 2-1 5-4 | 15A | 15A | 15A | 15A | 400W | 24° |
| S429 | — | — | DPDT | ON | 2-3 5-6 | OFF | (ON) | 2-1 5-4 | 15A | 15A | 15A | 15A | 400W | 24° |

Throw & Schematics:

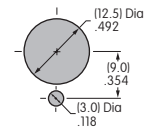
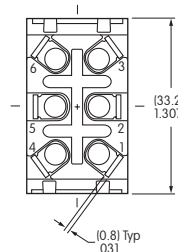
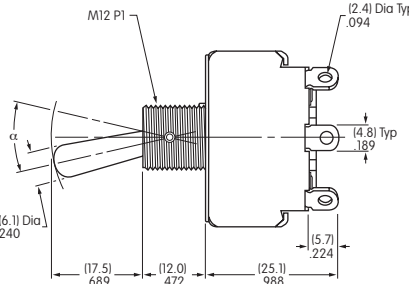
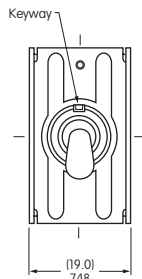


Note: Terminal numbers are on the switch

Notes: Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.
Optional Splashproof Boot Assemblies: AT401 & AT4181 boots plus hex nut & o-ring. See Accessories & Hardware section.






S422



Maximum Panel Thickness: .185" (4.7mm)

S421 does not have terminals 2 & 5

DOUBLE POLE WITH SCREW LUG

| Model | Approvals | | Pole & Throw | Toggle Position/Connected Terminals () = Momentary | | | | | | Electrical Capacity | | | | |
|-------|-----------|----|--------------|---|---|---|-----------|---------|--------------------------|---------------------|-----------------------|---------------------------|------|-----|
| | UL | CS | | Down  | Center  | Up  | Resistive | | Inductive | | Motor Load AC 125V | α = Angle of Throw | | |
| | | | | | | | AC 125V | AC 250V | PF 0.75 - 0.8 AC 125V | AC 250V | | | | |
| S421T | — | — | DPST | ON | 1-3 4-6 | NONE | OFF | — | 20A | 20A | 20A | 20A | 750W | 24° |
| S422T | — | — | DPDT | ON | 2-3 5-6 | NONE | ON | 2-1 5-4 | 20A | 20A | 20A | 20A | 750W | 24° |
| S423T | — | — | DPDT | ON | 2-3 5-6 | OFF | ON | 2-1 5-4 | 20A | 20A | 20A | 20A | 750W | 28° |
| S425T | — | — | DPDT | ON | 2-3 5-6 | NONE | (ON) | 2-1 5-4 | 15A | 15A | 15A | 15A | 400W | 24° |
| S428T | — | — | DPDT | (ON) | 2-3 5-6 | OFF | (ON) | 2-1 5-4 | 15A | 15A | 15A | 15A | 400W | 24° |
| S429T | — | — | DPDT | ON | 2-3 5-6 | OFF | (ON) | 2-1 5-4 | 15A | 15A | 15A | 15A | 400W | 24° |

Throw & Schematics:

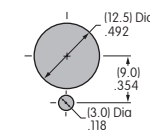
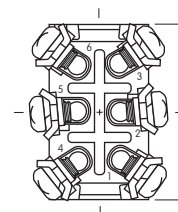
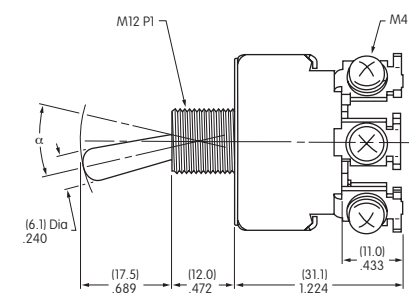
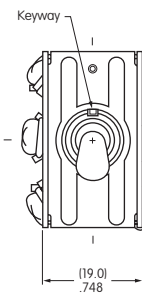


Note: Terminal numbers are on the switch

Notes: Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.
Optional Splashproof Boot Assemblies: AT401 & AT4181 boots plus hex nut & o-ring. See Accessories & Hardware section.



S423T



Maximum Panel Thickness: .185" (4.7mm)

S421T does not have terminals 2 & 5

Rockers

Pushbuttons

Illuminated PB

Programmable

Keylocks

Rotaries

Slides

Tactiles

Tilt

Touch

Indicators

Accessories

Supplement

GENERAL SPECIFICATIONS FOR S800s ~ S732

Electrical Capacity (Resistive & Inductive Load)

Power Level: Shown in the following tables

Other Ratings

Contact Resistance: 10 milliohms maximum
Insulation Resistance: 1,000 megohms minimum @ 500V DC
Dielectric Strength: 2,000V AC minimum for 1 minute minimum for S800s & S800Ds
 3,000V AC minimum for 1 minute minimum for S732
Mechanical Life: 50,000 operations minimum
Electrical Life: 10,000 operations minimum for S800Ds
 25,000 operations minimum for S800s & S732

Materials & Finishes

Toggle: Brass with nickel plating for S732
 Brass with chrome plating for S800s & S800Ds
Bushing: Brass with chrome plating
Case: Phenolic resin for S732; melamine phenol for S800s
Case Cover: Steel with chromate plating over zinc plating
Movable Contactor Plate: Copper with silver plating
Movable & Stationary Contacts: Silver alloy capped on copper with silver plating
Common Terminals: Brass
Contact Terminals: Brass with silver or nickel plating

Environmental Data

Operating Temp Range: -10°C through +70°C (+14°F through +158°F)

Installation

Mounting Torque: 2.94Nm (26 lb•in) for double nut
Maximum Panel Thickness: Shown beneath panel cutout in switch dimension drawings

Standards & Certifications

UL: File No. E44145 - Recognized only when ordered with marking on switch.
 Add "/U" or "/CUL" to end of part number to order UL recognized switch.
 UL or cULus recognition designated beside part numbers on following pages.
 See Supplement section to find UL or cULus rating details.

CSA: File No. 023535_0_000 - Certified only when ordered with marking on switch.
 Add "/C" to end of part number to order CSA certified switch.
 CSA certification designated beside part numbers on following pages.
 See Supplement section to find CSA rating details.

A
Toggles

Rockers

Pushbuttons

Illuminated PB

Programmable

Keylocks

Rotaries

Slides

Tactiles

Tilt

Touch

Indicators

Accessories

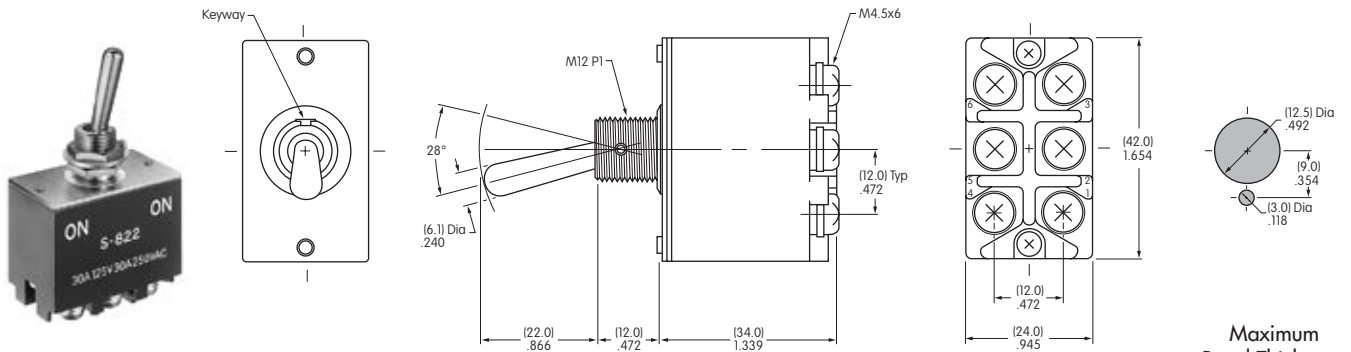
Supplement

DOUBLE POLE WITH SCREW LUG

| * UL, cULus & CSA recognized only when ordered with marking on switch (see General Specs) | | | Toggle Position/Connected Terminals | | | | Electrical Capacity | | | | | | | |
|---|-------------|-------|-------------------------------------|--------------|------------|--------|---------------------|-----------|---------|--------|---------|----------------|----------------|------------|
| Model | * Approvals | | | Pole & Throw | Down | Center | Up | Resistive | | | | Inductive | | Motor Load |
| | UL | cULus | CSA | | Keyway | None | None | AC 125V | AC 250V | DC 30V | DC 125V | AC 125V PF 0.6 | AC 250V PF 0.6 | AC 125V |
| S821 | ✓ | ✓ | ✓ | DPST | ON 2-3 5-6 | NONE | OFF — | 30A | 30A | 30A | 1A | 30A | 15A | 750W |
| S822 | ✓ | ✓ | ✓ | DPDT | ON 2-3 5-6 | NONE | ON 2-1 5-4 | 30A | 30A | 30A | 1A | 30A | 15A | — |
| S823 | ✓ | ✓ | ✓ | DPDT | ON 2-3 5-6 | OFF | ON 2-1 5-4 | 30A | 30A | 30A | 1A | 30A | 15A | — |



Notes: Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.
 Optional Splashproof Boot Assembly: AT401 boot plus hex nut & o-ring. See Accessories & Hardware section.



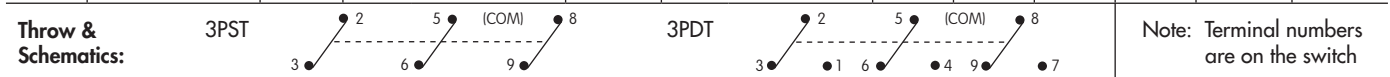
S822

S821 does not have terminals 1 & 4

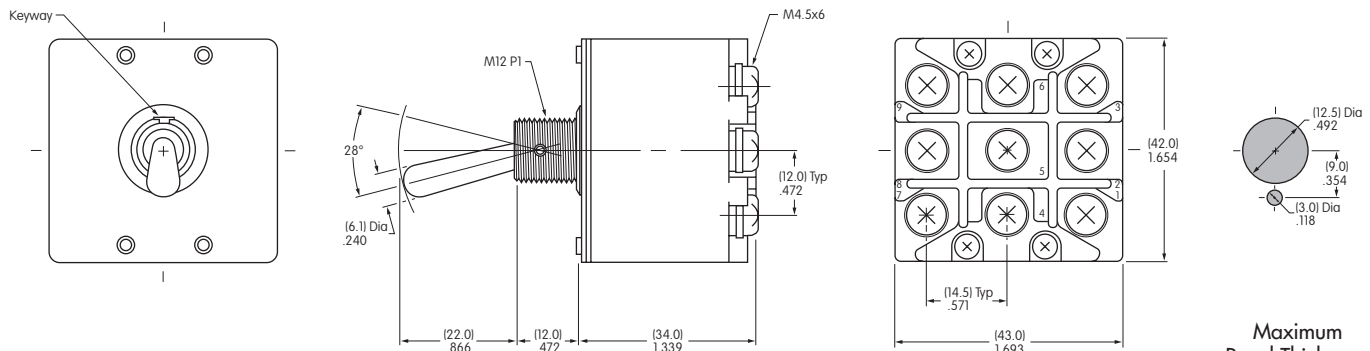
Maximum Panel Thickness: .177" (4.5mm)

THREE POLE WITH SCREW LUG

| * UL, cULus & CSA recognized only when ordered with marking on switch (see General Specs) | | | Toggle Position/Connected Terminals | | | | Electrical Capacity | | | | | | |
|---|-------------|-------|-------------------------------------|--------------|----------------|--------|---------------------|-----------|---------|--------|---------|----------------|----------------|
| Model | * Approvals | | | Pole & Throw | Down | Center | Up | Resistive | | | | Inductive | |
| | UL | cULus | CSA | | Keyway | None | None | AC 125V | AC 250V | DC 30V | DC 125V | AC 125V PF 0.6 | AC 250V PF 0.6 |
| S831 | ✓ | ✓ | ✓ | 3PST | ON 2-3 5-6 8-9 | NONE | OFF — | 30A | 30A | 30A | 1A | 30A | 15A |
| S832 | ✓ | ✓ | ✓ | 3PDT | ON 2-3 5-6 8-9 | NONE | ON 2-1 5-4 8-7 | 30A | 30A | 30A | 1A | 30A | 15A |
| S833 | ✓ | ✓ | ✓ | 3PDT | ON 2-3 5-6 8-9 | OFF | ON 2-1 5-4 8-7 | 30A | 30A | 30A | 1A | 30A | 15A |



Notes: Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.
 Optional Splashproof Boot Assembly: AT401 boot plus hex nut & o-ring. See Accessories & Hardware section.






S833

S831 does not have terminals 1, 4 & 7

Maximum Panel Thickness: .177" (4.5mm)

DOUBLE POLE WITH SCREW LUG & FLATTED LEVER

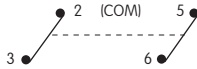
* UL, cULus & CSA recognized only when ordered with marking on switch (see General Specs)

| Model | *Approvals UL cULus CSA | Pole & Throw | Toggle Position/Connected Terminals | | | | | | Electrical Capacity | | | | | | | | | | | |
|-------|----------------------------|--------------|---|------|-----|---|-----|---|---------------------|--------|---------|---------|---------------------|--------|----------|---------|---------|-----|----|----|
| | | | Down  | | | Center  | | Up  | Resistive | | | | Inductive L/R = 3ms | | | | | | | |
| | | | ON | 2-3 | 5-6 | NONE | OFF | — | DC 30V | DC 48V | DC 125V | DC 250V | DC 400V | DC 24V | DC 48V | DC 125V | DC 250V | | | |
| S821D | ✓ | ✓ | ✓ | DPST | ON | 2-3 | 5-6 | NONE | OFF | — | 30A | 30A | 20A | 15A | 4A (10A) | 15A | 10A | 6A | 3A | |
| S822D | ✓ | ✓ | ✓ | DPDT | ON | 2-3 | 5-6 | NONE | ON | 2-1 | 5-4 | 30A | 30A | 20A | 15A | 4A | 15A | 10A | 6A | 3A |
| S823D | ✓ | ✓ | ✓ | DPDT | ON | 2-3 | 5-6 | OFF | ON | 2-1 | 5-4 | 30A | 30A | 15A | 7.5A | — | 15A | 10A | 6A | 3A |

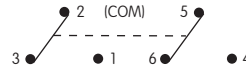
() capacity is due to wiring. Refer to instructions below.

Throw & Schematics:

DPST

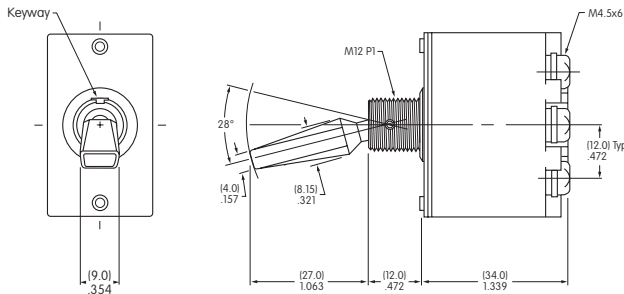


DPDT

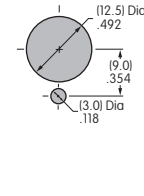
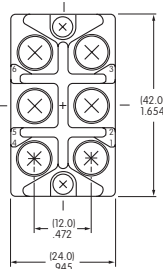


Note: Terminal numbers are on the switch

Notes: Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.



Double Pole



Maximum Panel Thickness: .177" (4.5mm)



S822D

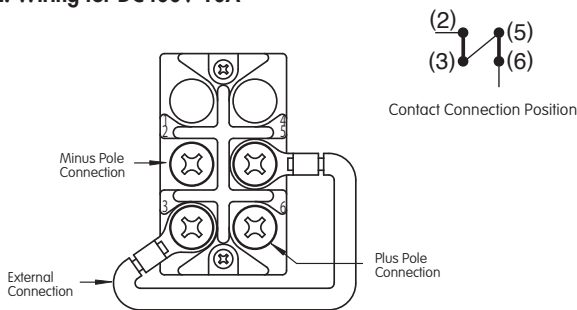
S821D does not have terminals 1 & 4

400V DC WIRING INSTRUCTIONS

1. DC Switch Use

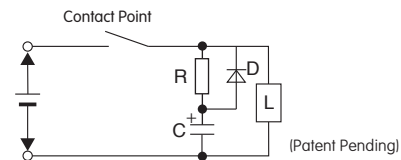
- Middle terminal shall be the minus pole when using DC circuit. Switch case is marked with (+) and (-).
- Do not store near (5cm) highly magnetic items.
- If actuation is interrupted when switching from ON to OFF, arcing may continue and switch could be burned.

2. Wiring for DC400V 10A



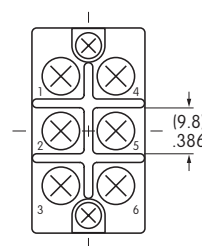
3. Inductive Load

Inductive loads produce an arc caused by counter-electromotive force when opening the circuit. Recommend inserting spark elimination circuit. Contact factory for details.



4. Compressed Terminal Connection

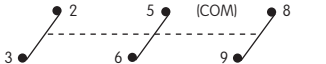
When connecting screw terminal with compressed terminal, select compressed terminal using drawing below.




THREE POLE WITH SCREW LUG & FLATTED LEVER

| * UL, cULus & CSA recognized only when ordered with marking on switch (see General Specs) | | | Toggle Position/Connected Terminals | | | Electrical Capacity | | | | | | | | | |
|---|-------------|-------|-------------------------------------|--------------|----------------|---------------------|----------------|-----------|--------|---------|---------|---------------------|--------|---------|---------|
| Model | * Approvals | | | Pole & Throw | Down | Center | Up | Resistive | | | | Inductive L/R = 3ms | | | |
| | UL | cULus | CSA | | Keyway | | | DC 30V | DC 48V | DC 125V | DC 250V | DC 24V | DC 48V | DC 125V | DC 250V |
| S831D | ✓ | ✓ | ✓ | 3PST | ON 2-3 5-6 8-9 | NONE | OFF — | 30A | 30A | 15A | 7.5A | 15A | 10A | 6A | 3A |
| S832D | ✓ | ✓ | ✓ | 3PDT | ON 2-3 5-6 8-9 | NONE | ON 2-1 5-4 8-7 | 30A | 30A | 15A | 7.5A | 15A | 10A | 6A | 3A |
| S833D | ✓ | ✓ | ✓ | 3PDT | ON 2-3 5-6 8-9 | OFF | ON 2-1 5-4 8-7 | 30A | 30A | 15A | 7.5A | 15A | 10A | 6A | 3A |

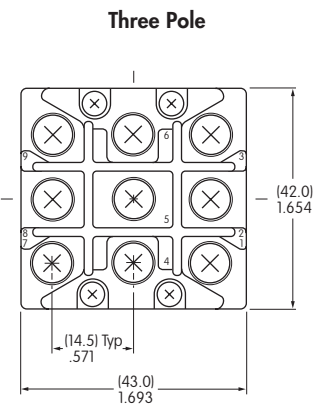
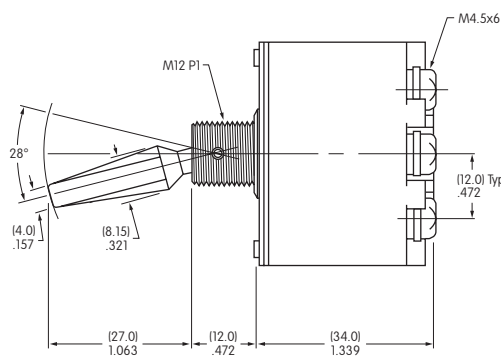
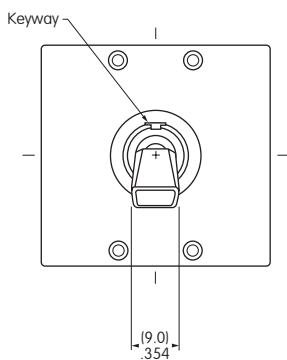
Throw & Schematics:

3PST: 

3PDT: 

Note: Terminal numbers are on the switch

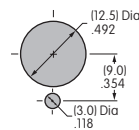
Notes: Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.



S831D does not have terminals 1, 4 & 7.
Positive (+) must be connected to end terminals & negative to common terminals.




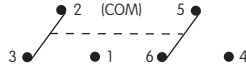


S832D

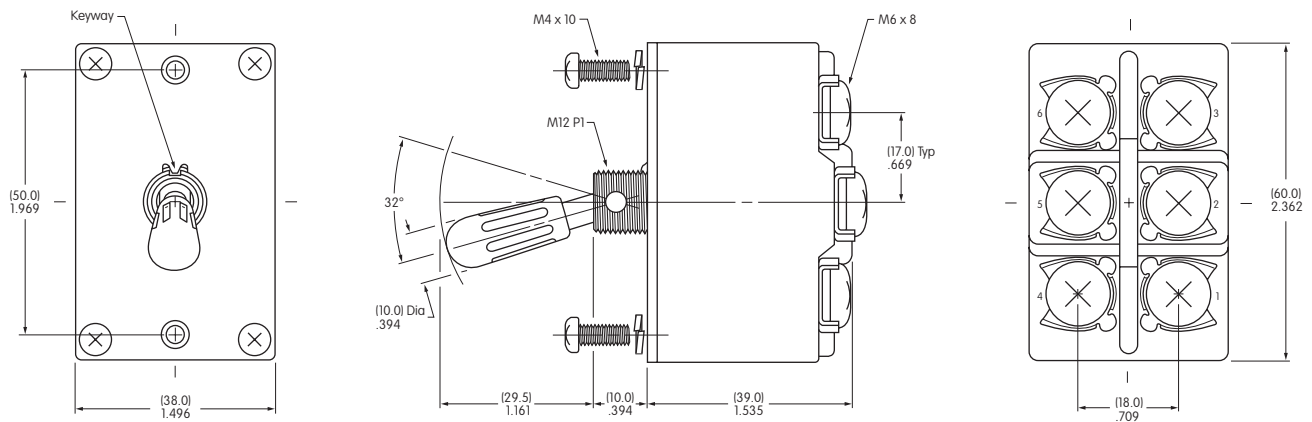


Maximum Panel Thickness: .177" (4.5mm)

DOUBLE POLE WITH SCREW LUG

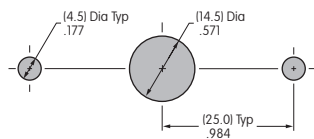
| Model | Approvals UL SP | Pole & Throw | Toggle Position/Connected Terminals | | | Electrical Capacity | | | |
|--------------------------------|--------------------|--------------|---|---|---|--|---------|--------|----------------|
| | | | Down  | Center  | Up  | Resistive | | | Inductive |
| | | | | | | AC 125V | AC 250V | DC 30V | AC 125V PF 0.6 |
| S732 | — — | DPDT | ON 2-3 5-6 | NONE | ON 2-1 5-4 | 50A | 30A | 50A | 25A |
| Throw & Schematics: | | DPDT |  | | | Note: Terminal numbers are on the switch | | | |

Notes: Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.



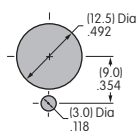
Cap of phenolic resin is black

Panel Mount with Mounting Screws

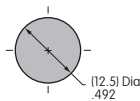


Maximum Panel Thickness:
.158" (4.0mm)

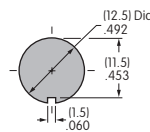
Panel Mount with Bushing Hardware



Maximum Panel Thickness:
.079" (2.0mm)



Maximum Panel Thickness:
.118" (3.0mm)



Maximum Panel Thickness:
.118" (3.0mm)



S732



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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