

## GENERAL SPECIFICATIONS FOR S100s

A  
Toggles

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 table**Other Ratings**

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

**Materials & Finishes**

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

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

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

**Standards & Certifications**

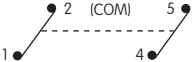
**CSA:** File No. 023535\_0\_000 - Certified only when ordered with marking on switch.  
Add "/C" to end of part number to order CSA certified switch.  
Certified at 5A @ 125V AC & 2A @ 250V AC.

### DOUBLE POLE WITH SOLDER LUG

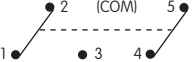
| * CSA certified only when ordered with marking on switch (see General Specs) |                                                                                   |                                                                                   | Toggle Position/Connected Terminals |                                                                                   |                                                                                   |                                                                                   |  | 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 |                |
| 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:

DPST



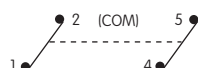
DPDT



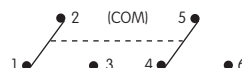
Note: Terminal numbers are actually on the switch

Throw & Schematics:

DPST



DPDT



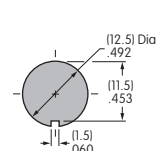
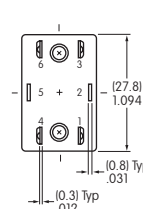
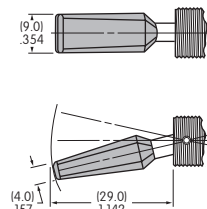
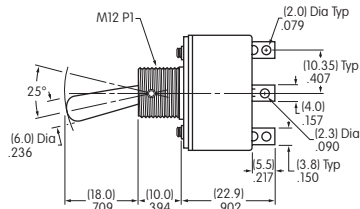
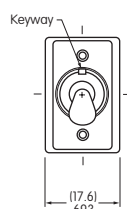
Note: Terminal numbers are actually on the switch

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

Optional Splashproof Boot Assemblies (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)

## GENERAL SPECIFICATIONS FOR S1 ~ S29

A  
Toggles

## Electrical Capacity (Resistive &amp; Inductive Load)

Power Level: Shown in the following tables

Rockers

## 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<br>50,000 operations minimum for all other models |
| Electrical Life:             | 25,000 operations minimum                                                                                             |
| Angle of Throw ( $\alpha$ ): | Shown in tables on following pages                                                                                    |

Pushbuttons

Illuminated PB

## Materials &amp; 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                            |

Programmable

Keylocks

Rotaries

## Environmental Data

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

Slides

## Installation

|                               |                                                                                                        |
|-------------------------------|--------------------------------------------------------------------------------------------------------|
| Mounting Torque:              | 1.47Nm (13 lb•in) for single nut on AW & AL models<br>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.                                                 |

Tactiles

Tilt

## Standards &amp; Certifications

|      |                                                                                                                                                                                                                                                                                                      |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UL:  | <b>File No. E44145 - Recognized only when ordered with marking on switch.</b><br>Add "/U" or "/CUL" to end of part number to order UL recognized switch.<br>UL or cULus recognition designated beside part numbers on following pages.<br>See Supplement section to find UL or cULus rating details. |
| CSA: | <b>File No. 023535_0_000 - Certified only when ordered with marking on switch.</b><br>Add "/C" to end of part number to order CSA certified switch.<br>CSA certification designated beside part numbers on following pages.<br>See Supplement section to find CSA rating details.                    |

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### 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:                                                                                                                                                                                                                           |                                                                                   |                                                                                   |                                                                                   |                                     |                                                                                   |                                                                                   |                                                                                   |                     | Note: Terminal numbers are actually on the switch |        |                |                |  |
| <div><div>SPST</div><div></div></div> <div><div>SPDT</div><div></div></div> |                                                                                   |                                                                                   |                                                                                   |                                     |                                                                                   |                                                                                   |                                                                                   |                     |                                                   |        |                |                |  |

Throw & Schematics:

SPST



SPDT

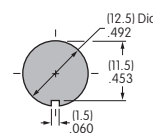
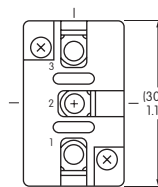
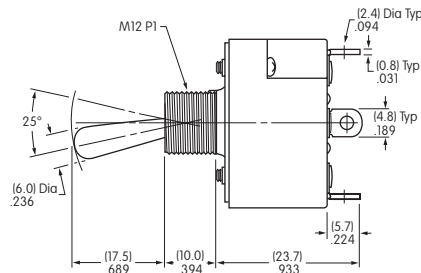
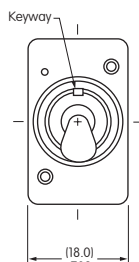


Note: Terminal numbers are actually on the switch

**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



Maximum Panel Thickness: .158" (4.0mm)

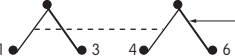
S1A does not have terminal 2

### 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 |         |        |                | $\alpha$ = Angle of Throw |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------|---------|--------|----------------|---------------------------|
| Model                                                                                     | * Approvals                                                                         |                                                                                     |                                                                                     | Pole & Throw                        | Down<br> | Center<br> | Up<br> | Resistive           |         |        | Inductive      |                           |
|                                                                                           |  |  |  |                                     |                                                                                             |                                                                                               |                                                                                           | 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



(COM)

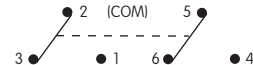
Note: Terminal numbers are actually on the switch

Throw & Schematics:

DPST



DPDT

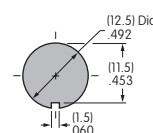
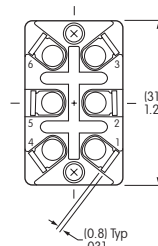
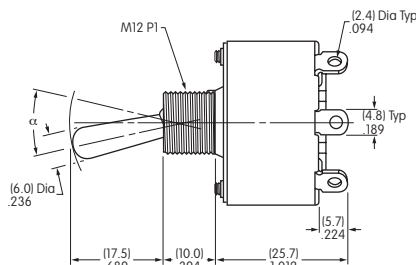
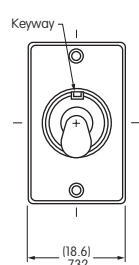


Note: Terminal numbers are actually on the switch

**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.



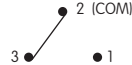
S6A



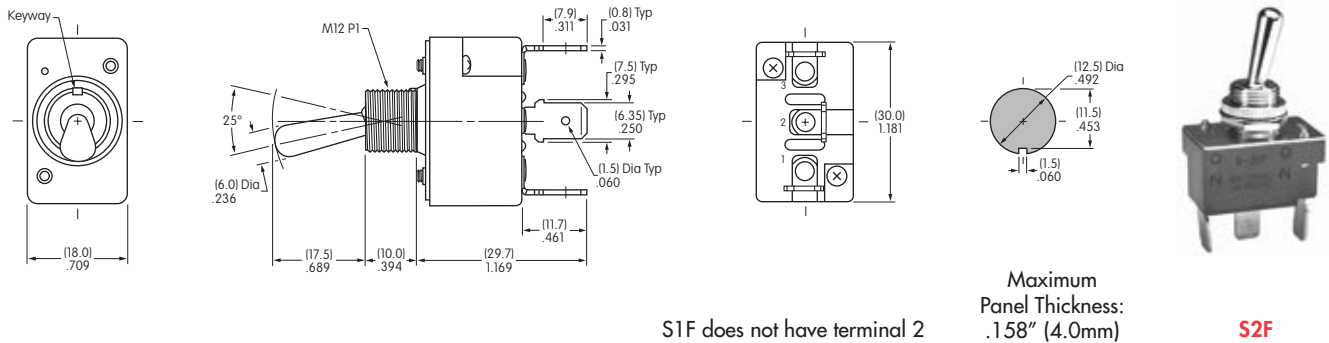
Maximum Panel Thickness: .158" (4.0mm)

S21A does not have terminals 2 & 5

## SINGLE POLE WITH QUICK CONNECT

|                                                                                                                                                                                                                                                                                               |                                                                                   |                                                                                   | Toggle Position/Connected Terminals |                                                                                                            |                                                                                   |                                                                                   | Electrical Capacity                               |         |        |                |                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------|---------|--------|----------------|----------------|
| Model                                                                                                                                                                                                                                                                                         | Approvals                                                                         |                                                                                   | Pole & Throw                        | Down                                                                                                       | Center                                                                            | Up                                                                                | Resistive                                         |         |        | Inductive      | Angle of Throw |
|                                                                                                                                                                                                                                                                                               |  |  |                                     | <br><small>Keyway</small> |  |  | 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:                                                                                                                                                                                                                                                                           |                                                                                   |                                                                                   |                                     |                                                                                                            |                                                                                   |                                                                                   | Note: Terminal numbers are actually on the switch |         |        |                |                |
| <div><div>SPST</div><div></div><div>INTERNAL CONNECTION</div></div> <div><div>SPDT</div><div></div><div>2 (COM)</div></div> |                                                                                   |                                                                                   |                                     |                                                                                                            |                                                                                   |                                                                                   |                                                   |         |        |                |                |

**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

|       |                                                                                                                                                                                      |              | Toggle Position/Connected Terminals                                                         |         |                                                                                               |     |                                                                                           | Electrical Capacity |           |         |        |                |                                 |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------|-----|-------------------------------------------------------------------------------------------|---------------------|-----------|---------|--------|----------------|---------------------------------|
| Model | Approvals<br>  | Pole & Throw | Down<br> |         | Center<br> |     | Up<br> |                     | Resistive |         |        | Inductive      | $\alpha$ =<br>Angle<br>of Throw |
|       |                                                                                                                                                                                      |              |                                                                                             | Keyway  |                                                                                               |     |                                                                                           |                     | 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



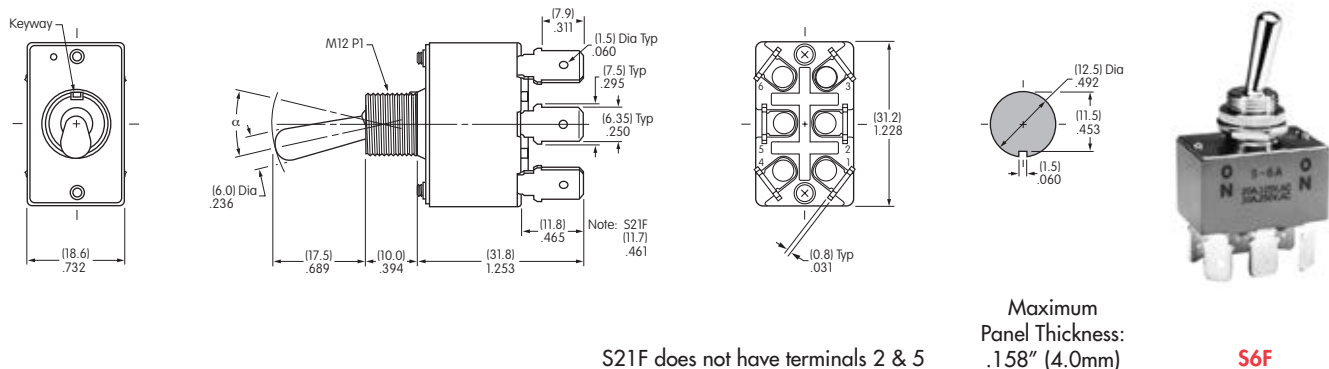
INTERNAL CONNECTION

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.



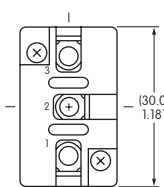
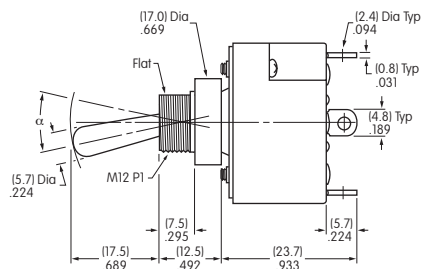
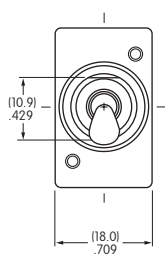
### SINGLE POLE SOLDER LUG WITH PANEL SEAL

|                     |                                                                                   |                                                                                   | Toggle Position/Connected Terminals<br>( ) = Momentary                            |                                                                                                       |                                                                                                         |                                                                                                     | Electrical Capacity                                                               |         |        |                                 |
|---------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------|--------|---------------------------------|
| Model               | Approvals                                                                         |                                                                                   | Pole & Throw                                                                      | <div>Down<br/></div> | <div>Center<br/></div> | <div>Up<br/></div> | Resistive                                                                         |         |        | $\alpha$ =<br>Angle<br>of Throw |
|                     |  |  |                                                                                   |                                                                                                       |                                                                                                         |                                                                                                     | 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: |                                                                                   |                                                                                   |                                                                                   |                                                                                                       |                                                                                                         |                                                                                                     | Note: Terminal numbers are actually on the switch                                 |         |        |                                 |
| SPST                |                                                                                   |                                                                                   |  |                                                                                                       |                                                                                                         |                                                                                                     |                                                                                   |         |        |                                 |
|                     |                                                                                   |                                                                                   | SPDT                                                                              |                                                                                                       |                                                                                                         |                                                                                                     |  |         |        |                                 |

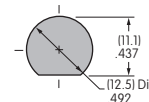
**Notes:** Standard Hardware: AT503M Face Hex Nut, Lockwasher, AT537 O-ring. See Accessories & Hardware section.  
For .250" Quick Connect terminals, add "F" to end of part number. See Quick Connect terminal dimensions on previous page.  
For further information, contact factory.



S2AW

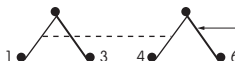


S1AW does not have terminal 2



Maximum Panel Thickness: .158" (4.0mm)

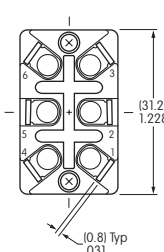
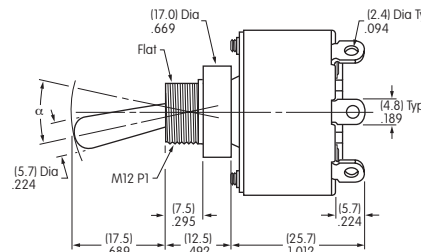
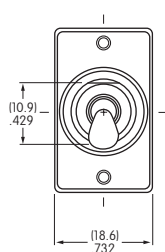
### DOUBLE POLE SOLDER LUG WITH PANEL SEAL

|                     |                                                                                                                                                                                      |              | Toggle Position/Connected Terminals<br>( ) = Momentary                                                       |         |                                                                                               |                                                                                           |         | Electrical Capacity                                                                       |        |     | $\alpha$ =<br>Angle<br>of Throw                   |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------|--------|-----|---------------------------------------------------|
| Model               | Approvals<br>  | Pole & Throw | Down<br>                  |         | Center<br> | Up<br> |         | 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 |         |                                                                                               |                                                                                           |         | DPDT  |        |     | 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



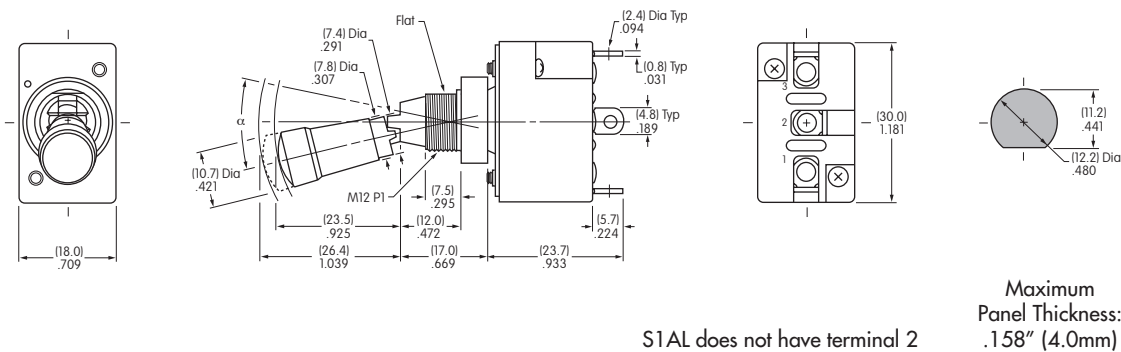
S21AW does not have terminals 2 & 5

Maximum Panel Thickness: .158" (4.0mm)

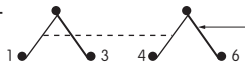
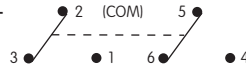
## SINGLE POLE SOLDER LUG WITH LOCKING LEVER & PANEL SEAL

|                     |                                                                                                                                                                                  |              | Toggle Position/Connected Terminals                                                       |                                                                                             |                                                                                         | Electrical Capacity                                                               |         |        |                                                                                   |                              |  |                                                   |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------|--------|-----------------------------------------------------------------------------------|------------------------------|--|---------------------------------------------------|
| Model               | Approvals<br>  | Pole & Throw | Down<br> | Center<br> | Up<br> | Resistive                                                                         |         |        | Inductive                                                                         | $\alpha =$<br>Angle of Throw |  |                                                   |
|                     |                                                                                                                                                                                  |              |                                                                                           |                                                                                             |                                                                                         | AC 125V                                                                           | AC 250V | DC 30V | AC 125V PF 0.6                                                                    |                              |  |                                                   |
| 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: |                                                                                                                                                                                  |              |                                                                                           |                                                                                             |                                                                                         |  |         |        |  |                              |  | Note: Terminal numbers are actually on the switch |
|                     |                                                                                                                                                                                  |              |                                                                                           |                                                                                             |                                                                                         |                                                                                   |         |        |                                                                                   |                              |  |                                                   |

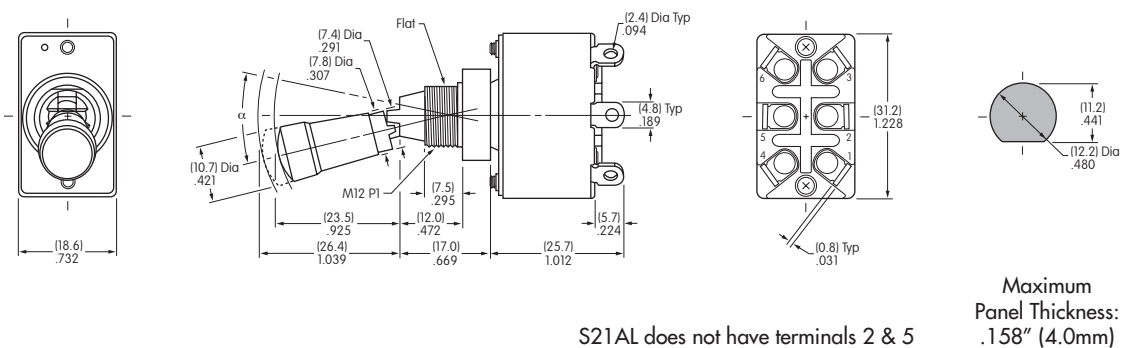
Notes: Standard Hardware: AT503M Face Hex Nut, Lockwasher, AT537 O-ring. See Accessories & Hardware section.



## DOUBLE POLE SOLDER LUG WITH LOCKING LEVER & PANEL SEAL

| * UL & cULus recognized only when ordered with marking on switch (see General Specs)                                                                                                                                                                       |                                                                                                                                                                                        |              | Toggle Position/Connected Terminals                                                         |                                                                                               |                                                                                           |                                                   | Electrical Capacity |        |                |                              |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------------------|---------------------|--------|----------------|------------------------------|--|
| Model                                                                                                                                                                                                                                                      | * Approvals<br>  | Pole & Throw | Down<br> | Center<br> | Up<br> | Resistive                                         |                     |        | Inductive      | $\alpha$ =<br>Angle of Throw |  |
|                                                                                                                                                                                                                                                            |                                                                                                                                                                                        |              |                                                                                             |                                                                                               |                                                                                           | AC 125V                                           | AC 250V             | DC 30V | AC 125V PF 0.6 |                              |  |
| 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:                                                                                                                                                                                                                                        |                                                                                                                                                                                        |              |                                                                                             |                                                                                               |                                                                                           | Note: Terminal numbers are actually on the switch |                     |        |                |                              |  |
| <div><div>DPST</div><div>INTERNAL CONNECTION</div></div> <div><div>DPDT</div></div> |                                                                                                                                                                                        |              |                                                                                             |                                                                                               |                                                                                           |                                                   |                     |        |                |                              |  |

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



## GENERAL SPECIFICATIONS FOR S301 ~ S339

## Electrical Capacity (Resistive &amp; Inductive Load)

**Power Level:** Shown in the following tables

## Other Ratings

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

## Materials &amp; Finishes

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

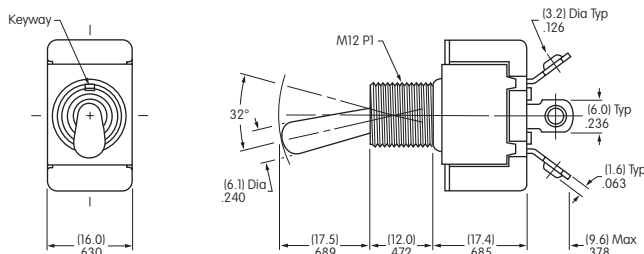
## Standards &amp; Certifications

- 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<br>( ) = Momentary                            |                                                                                   |                                                                                   |                                                                                   | Electrical Capacity                                                               |         |        |                |                |
|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------|--------|----------------|----------------|
| Model                                                                                     | * Approvals                                                                       |                                                                                   |                                                                                   | Pole & Throw                                                                      | Down<br><small>Keyway</small>                                                     | Center                                                                            | Up                                                                                | Resistive                                                                         |         |        | Inductive      | Angle of Throw |
|                                                                                           |  |  |  |                                                                                   |  |  |  | AC 125V                                                                           | AC 250V | DC 30V | AC 125V PF 0.6 |                |
| 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:                                                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Note: Terminal numbers are actually on the switch                                 |         |        |                |                |
| SPST                                                                                      |                                                                                   |                                                                                   |                                                                                   |  |                                                                                   |                                                                                   |                                                                                   | SPDT                                                                              |         |        |                |                |
|                                                                                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |  |         |        |                |                |

**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.



S301 does not have terminal 2

Maximum Panel Thickness: .185" (4.7mm)

S301

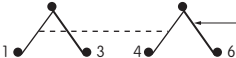


## DOUBLE POLE WITH SOLDER LUG

| * UL, cULus & CSA recognized only when ordered with marking on switch (see General Specs) |                                                                                     |                                                                                        |                                                                                     | Toggle Position/Connected Terminals<br>( ) = Momentary |                                                                                                                      |         |                                                                                               |                                                                                           | Electrical Capacity |        |                |           |                              |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------|--------|----------------|-----------|------------------------------|
| Model                                                                                     | * Approvals                                                                         |                                                                                        |                                                                                     | Pole & Throw                                           | Down<br><small>Keyway</small><br> |         | Center<br> | Up<br> | Resistive           |        |                | Inductive | $\alpha$ =<br>Angle of Throw |
|                                                                                           |  |  IS |  |                                                        |                                                                                                                      |         |                                                                                               | AC 125V                                                                                   | AC 250V             | DC 30V | AC 125V PF 0.6 |           |                              |
| 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°                          |

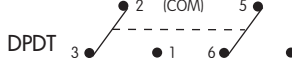
Throw & Schematics:

DPST



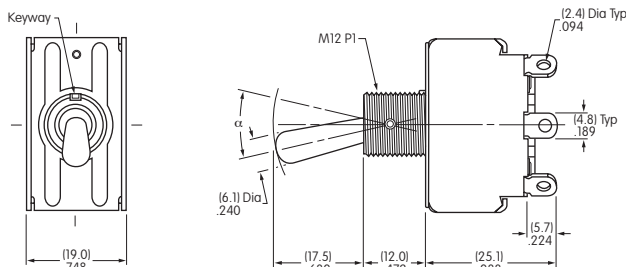
INTERNAL CONNECTION

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.



S331 does not have terminals 2 & 5

Maximum Panel Thickness: .185" (4.7mm)

S331



### DOUBLE POLE WITH SOLDER LUG & FLATTED LEVER

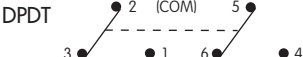
| * UL & cULus recognized only when ordered with marking on switch (see General Specs) |                                                                                   |                                                                                   |                                                                                   |              | Toggle Position/Connected Terminals<br>( ) = Momentary                            |                                                                                   |                                                                                   |           |         | 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 |                           |  |  |
| 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°                       |  |  |

Throw & Schematics:

DPST



DPDT



Note: Terminal numbers are actually on the switch

Throw & Schematics:

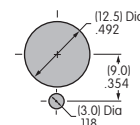
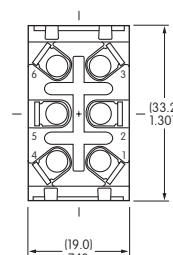
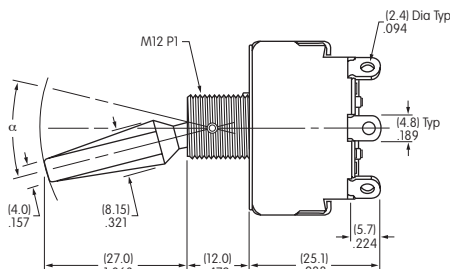
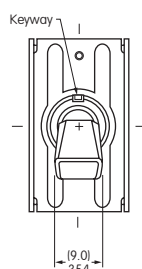


Note: Terminal numbers are actually on the switch

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



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<br>( ) = Momentary |                                                                                           |         |                                                                                             |                                                                                         | Electrical Capacity                               |    |     |           |                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------------------------------------|---------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------|----|-----|-----------|------------------------------|
| Model                                                                                                                                                                                                                                         | * Approvals                                                                       |                                                                                   |                                                                                   | Pole & Throw                                           | Down<br> |         | Center<br> | Up<br> | Resistive                                         |    |     | Inductive | $\alpha$ =<br>Angle of Throw |
|                                                                                                                                                                                                                                               |  |  |  |                                                        | 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:                                                                                                                                                                                                                           |                                                                                   |                                                                                   |                                                                                   |                                                        |                                                                                           |         |                                                                                             |                                                                                         | Note: Terminal numbers are actually on the switch |    |     |           |                              |
| <div><div>SPST</div><div></div></div> <div><div>SPDT</div><div></div></div> |                                                                                   |                                                                                   |                                                                                   |                                                        |                                                                                           |         |                                                                                             |                                                                                         |                                                   |    |     |           |                              |

Throw & Schematics:

SPST

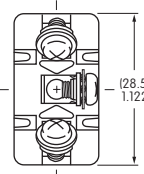
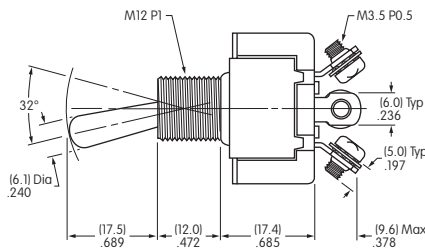
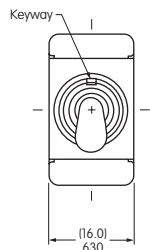


SPDT



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.



S301T does not have terminal 2

Maximum Panel Thickness: .185" (4.7mm)



**S301T**

## DOUBLE POLE WITH SCREW LUG

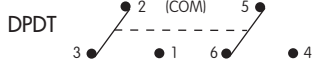
| * UL & cULus recognized only when ordered with marking on switch (see General Specs) |                                                                                     |                                                                                     |                                                                                     | Toggle Position/Connected Terminals<br>( ) = Momentary |                                                                                             |         |                                                                                               |                                                                                           | Electrical Capacity |     |     |           | $\alpha$ =<br>Angle of Throw |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------|-----|-----|-----------|------------------------------|
| Model                                                                                | * Approvals                                                                         |                                                                                     |                                                                                     | Pole & Throw                                           | Down<br> |         | Center<br> | Up<br> | Resistive           |     |     | Inductive |                              |
|                                                                                      |  |  |  |                                                        | 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



DPDT



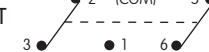
Note: Terminal numbers are actually on the switch

Throw & Schematics:

DPST

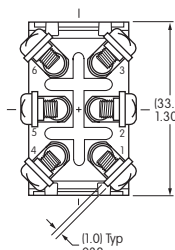
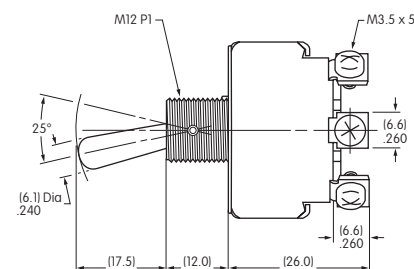
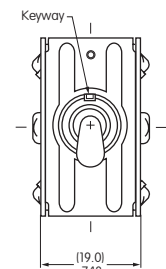


DPDT



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.



S331T does not have terminals 2 & 5

Maximum Panel Thickness: .185" (4.7mm)



**S331T**

Toggles

Rockers

Pushbuttons

Illuminated PB

Programmable

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 |        |                |  | $\alpha$ =<br>Angle of Throw |
|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------|---------------------|--------|----------------|--|------------------------------|
| Model                                                                                     | * Approvals                                                                       |                                                                                   |                                                                                   | Pole & Throw | Down<br> | Center<br> | Up<br> | Resistive |                     |        | Inductive      |  |                              |
|                                                                                           |  |  |  |              |                                                                                           |                                                                                             |                                                                                         | AC 125V   | AC 250V             | DC 30V | AC 125V PF 0.6 |  |                              |
| S301F                                                                                     | ✓                                                                                 | ✓                                                                                 | ✓                                                                                 | SPST         | ON 1-3                                                                                    | NONE                                                                                        | OFF —                                                                                   | 15A       | 6A                  | 20A    | 10A            |  |                              |

Throw & Schematics:

SPST



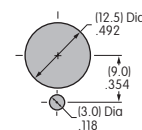
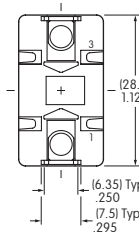
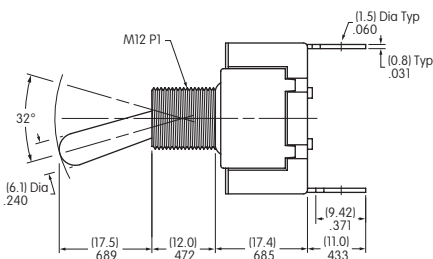
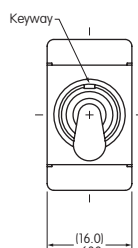
INTERNAL CONNECTION

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

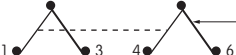


Maximum Panel Thickness: .185" (4.7mm)

### DOUBLE POLE WITH QUICK CONNECT

| * UL & cULus recognized only when ordered with marking on switch (see General Specs) |                                                                                     |                                                                                     |                                                                                     | Toggle Position/Connected Terminals<br>( ) = Momentary |                                                                                             |                                                                                               |                                                                                           | Electrical Capacity |         |        |                |                              |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------|---------|--------|----------------|------------------------------|
| Model                                                                                | * Approvals                                                                         |                                                                                     |                                                                                     | Pole & Throw                                           | Down<br> | Center<br> | Up<br> | Resistive           |         |        | Inductive      | $\alpha$ =<br>Angle of Throw |
|                                                                                      |  |  |  |                                                        |                                                                                             |                                                                                               |                                                                                           | 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

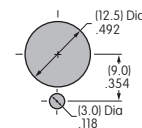
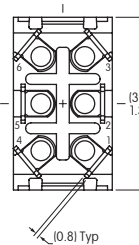
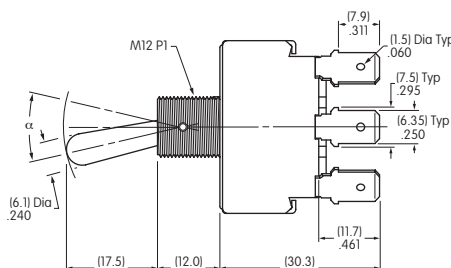
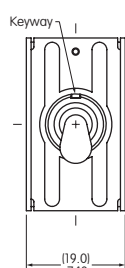
DPDT

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 &amp; 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 ( $\alpha$ ):** Shown on following tables

## Materials &amp; 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 &amp; 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

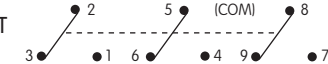
Indicators

Accessories

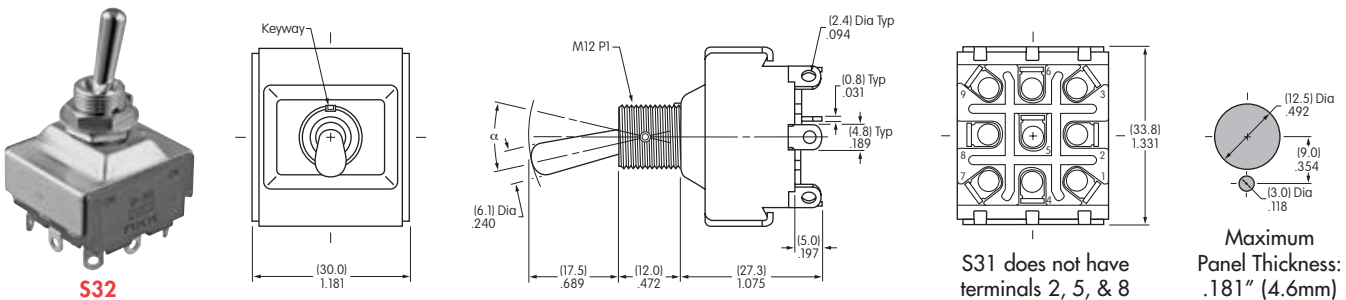
Supplement

### THREE POLE WITH SOLDER LUG

| * UL, cULus & CSA recognized only when ordered with marking on switch (see General Specs) |                                                                                   |                                                                                   |                                                                                   | Toggle Position/Connected Terminals<br>( ) = Momentary |                                                                                           |             |        |                                                                                         | Electrical Capacity |           |                |     |           |                           |
|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------|--------|-----------------------------------------------------------------------------------------|---------------------|-----------|----------------|-----|-----------|---------------------------|
| Model                                                                                     | * Approvals                                                                       |                                                                                   |                                                                                   | Pole & Throw                                           | Down<br> |             | Center | Up<br> |                     | Resistive |                |     | Inductive | $\alpha$ = Angle of Throw |
|                                                                                           |  |  |  |                                                        |                                                                                           |             |        | AC 125V                                                                                 | AC 250V             | DC 30V    | AC 125V PF 0.6 |     |           |                           |
| 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°                       |

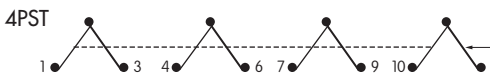
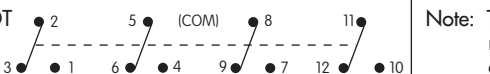
**Throw & Schematics:** 3PST  INTERNAL CONNECTION 3PDT  (COM) 8 7

**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.

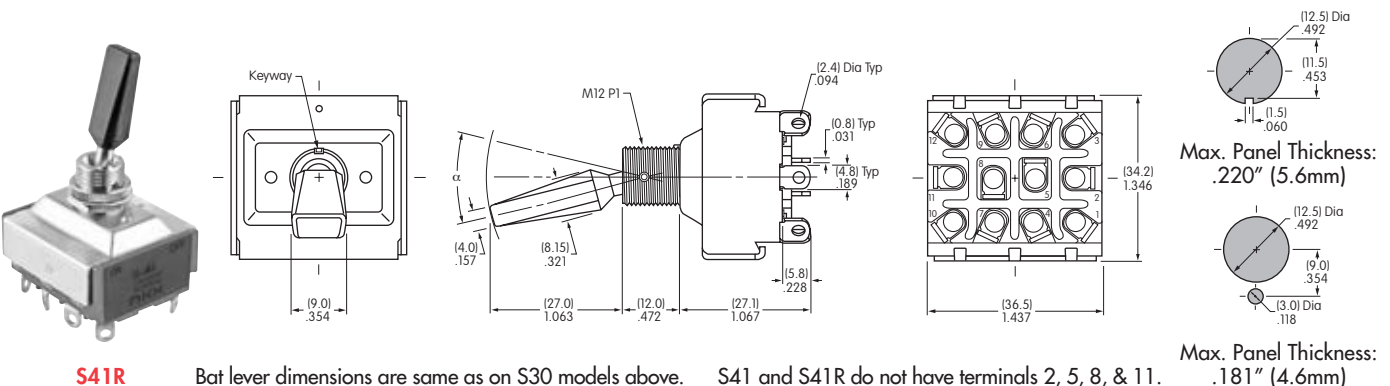


### FOUR POLE WITH SOLDER LUG

| * UL, cULus & CSA recognized only when ordered with marking on switch (see General Specs) |                                                                                     |                                                                                     |                                                                                     | Toggle Position/Connected Terminals<br>( ) = Momentary |                                                                                     |                                                                                     |                                                                                       |         |         |        | Electrical Capacity |                   |     |    |           |                              |     |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------|---------|--------|---------------------|-------------------|-----|----|-----------|------------------------------|-----|
| Model<br>Suffix R =<br>Flatted Lever                                                      | * Approvals                                                                         |                                                                                     |                                                                                     | Pole & Throw                                           | Down<br><small>Keyway</small>                                                       |                                                                                     |                                                                                       | Center  | Up      |        |                     | Resistive         |     |    | Inductive | $\alpha$ =<br>Angle of Throw |     |
|                                                                                           |  |  |  |                                                        |  |  |  | AC 125V | AC 250V | DC 30V | AC 125V<br>PF 0.6   |                   |     |    |           |                              |     |
| 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:** 4PST  INTERNAL CONNECTION 4PDT  (COM) 8 7 11 10

**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.

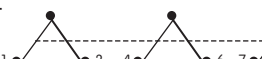
Max. Panel Thickness: .181" (4.6mm)

## 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<br> | Center<br> | Up<br> | 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°                       |  |

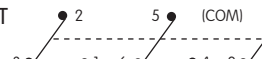
Throw & Schematics:

3PST



INTERNAL CONNECTION

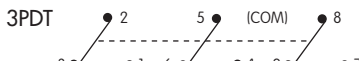
3PDT



(COM)

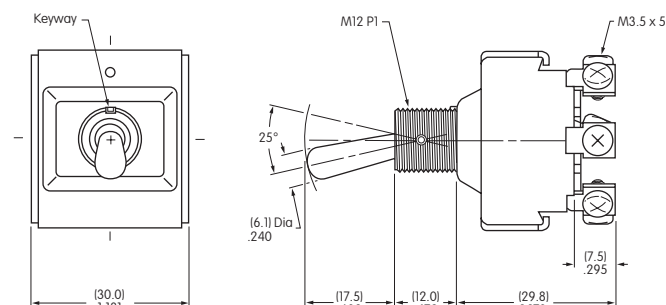
Note: Terminal numbers are on the switch

Throw & Schematics:

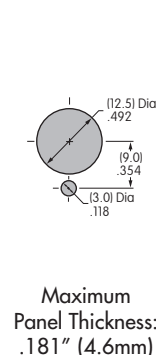


Note: Terminal numbers are on the switch

**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.



S31T does not have terminals 2, 5, & 8



S32T

## 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<br> |     |     |     | Center<br> | Up<br> |                     |         |        | Resistive      |                |     | Inductive |     | $\alpha$ = Angle of Throw |    |     |
|                                                                                           |  |  |  |                                     | Keyway   |     |     |     |                                                                                               |                                                                                           | AC 125V             | AC 250V | DC 30V | AC 125V PF 0.6 | AC 250V PF 0.6 |     |           |     |                           |    |     |
| <b>S41T</b>                                                                               | ✓                                                                                   | ✓                                                                                   | ✓                                                                                   | 4PST                                | ON                                                                                          | 1-3 | 4-6 | 7-9 | 10-12                                                                                         | NONE                                                                                      | OFF                 | —       |        |                |                | 20A | 9A        | 20A | 10A                       | 5A | 25° |
| <b>S42T</b>                                                                               | ✓                                                                                   | ✓                                                                                   | ✓                                                                                   | 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° |
| <b>S43T</b>                                                                               | ✓                                                                                   | ✓                                                                                   | ✓                                                                                   | 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° |

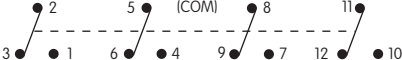
Throw & Schematics:

4PST



INTERNAL CONNECTION

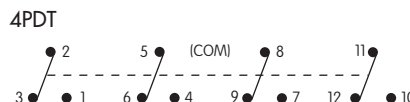
4PDT



(COM)

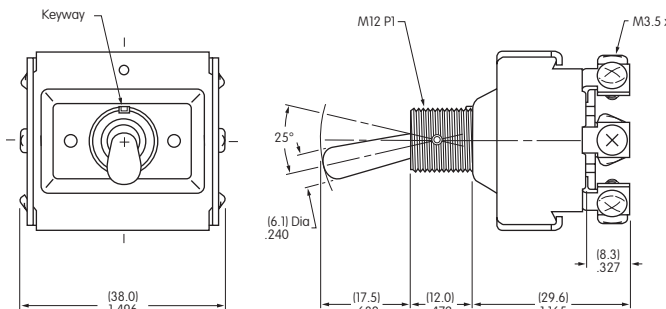
Note: Terminal numbers are on the switch

Throw & Schematics:

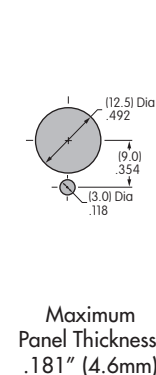


Note: Terminal numbers are on the switch

**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.



S41T does not have terminals 2, 5, 8, & 11



S42T

### 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 | $\alpha$ =<br>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:

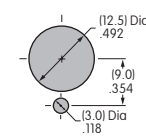
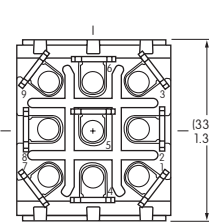
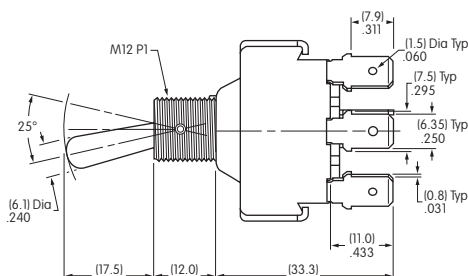
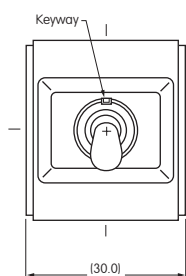


Note: Terminal numbers are on the switch

**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



Maximum Panel Thickness: .181" (4.6mm)

S31F does not have terminals 2, 5, & 8

### 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 | $\alpha$ =<br>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:

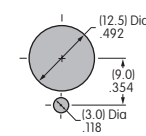
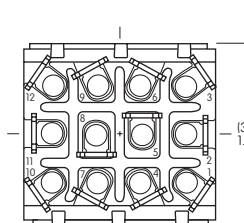
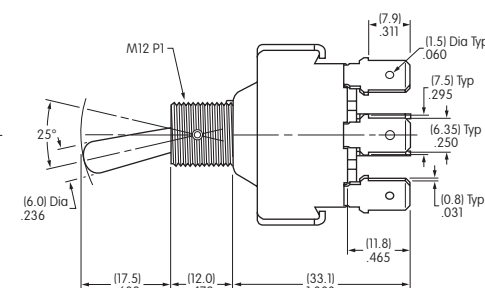
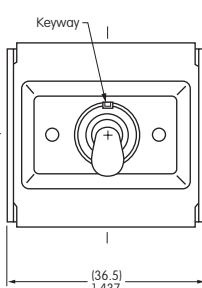


Note: Terminal numbers are on the switch

**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



Maximum Panel Thickness: .181" (4.6mm)

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

## GENERAL SPECIFICATIONS FOR S421 ~ S429

A  
Toggles

## Electrical Capacity (Resistive &amp; Inductive Load)

Power Level: Shown in the following tables

Rockers

## 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 ( $\alpha$ ): | Shown in tables on following pages     |

Pushbuttons

Illuminated PB

Programmable

## Materials &amp; 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                            |

Keylocks

Rotaries

## Environmental Data

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

Slides

## 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.  |

Tactiles

Tilt

Touch

Indicators

Accessories

Supplement

### DOUBLE POLE WITH SOLDER LUG

|       |                                                                                   |                                                                                   | Toggle Position/Connected Terminals<br>( ) = Momentary |                                                                                           |                                                                                   |                                                                                             | Electrical Capacity                                                                     |           |               |           |         |            |                              |
|-------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------|---------------|-----------|---------|------------|------------------------------|
| Model | Approvals                                                                         |                                                                                   | Pole & Throw                                           | Down<br> |                                                                                   | Center<br> | Up<br> | Resistive |               | Inductive |         | Motor Load | $\alpha$ =<br>Angle of Throw |
|       |  |  |                                                        | Keyway   |  |            | AC 125V                                                                                 | AC 250V   | PF 0.75 - 0.8 |           | AC 125V |            |                              |
|       |                                                                                   |                                                                                   |                                                        |                                                                                           |                                                                                   |                                                                                             |                                                                                         |           | AC 125V       | AC 250V   |         | 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:

DPST



INTERNAL CONNECTION

DPDT



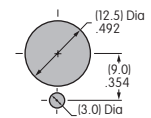
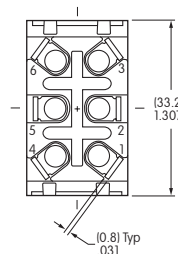
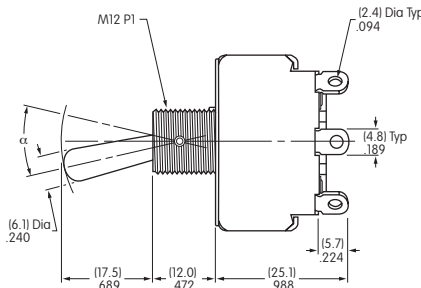
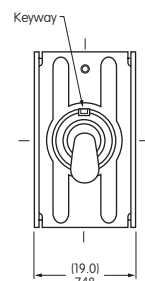
(COM)

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

|       |                                                                                                                                                                                      |              | Toggle Position/Connected Terminals<br>( ) = Momentary                                      |      |                                                                                               |                                                                                           | Electrical Capacity |         |               |         |            |                              |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------|---------|---------------|---------|------------|------------------------------|
| Model | Approvals<br>  | Pole & Throw | Down<br> |      | Center<br> | Up<br> | Resistive           |         | Inductive     |         | Motor Load | $\alpha$ =<br>Angle of Throw |
|       |                                                                                                                                                                                      |              |                                                                                             |      |                                                                                               |                                                                                           | AC 125V             | AC 250V | PF 0.75 - 0.8 |         | AC 125V    |                              |
|       |                                                                                                                                                                                      |              |                                                                                             |      |                                                                                               |                                                                                           | AC 125V             | AC 250V | 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°        |                              |

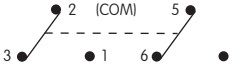
Throw & Schematics:

DPST



INTERNAL CONNECTION

DPDT



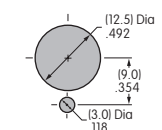
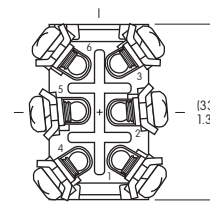
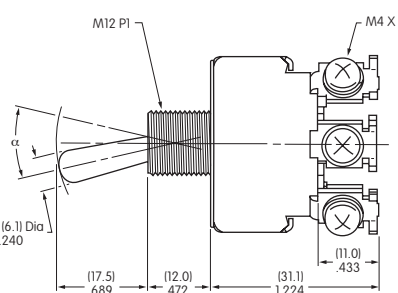
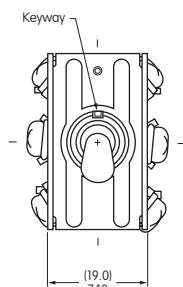
(COM)

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

## GENERAL SPECIFICATIONS FOR S800s ~ S732

### Electrical Capacity (Resistive & Inductive Load)

**Power Level:** Shown in the following tables

### Other Ratings

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

### Materials & Finishes

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

### Environmental Data

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

### Installation

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

### Standards & Certifications

|             |                                                                                                                                                                                                                                                                                                      |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>UL:</b>  | <b>File No. E44145 - Recognized only when ordered with marking on switch.</b><br>Add "/U" or "/CUL" to end of part number to order UL recognized switch.<br>UL or cULus recognition designated beside part numbers on following pages.<br>See Supplement section to find UL or cULus rating details. |
| <b>CSA:</b> | <b>File No. 023535_0_000 - Certified only when ordered with marking on switch.</b><br>Add "/C" to end of part number to order CSA certified switch.<br>CSA certification designated beside part numbers on following pages.<br>See Supplement section to find CSA rating details.                    |

A  
Toggles

Rockers

Pushbuttons

Pushbuttons  
Illuminated PB

Programmable

Keylocks

Rotaries

Slides

Tactiles

Tilt

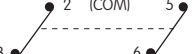
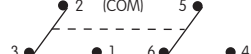
Touch

Indicators

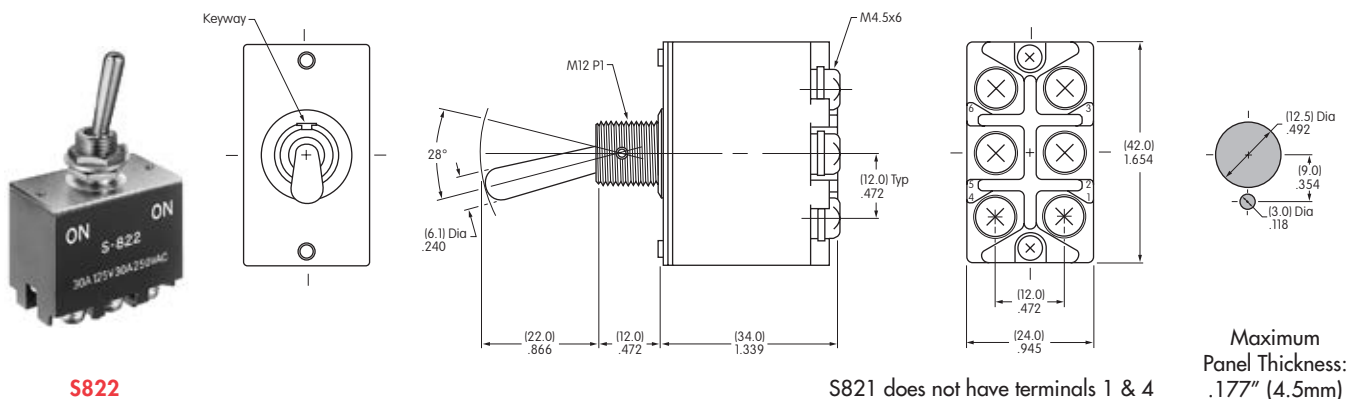
Accessories

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 |
|                                                                                           |  |  |  |                                     |  |  |  | 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 | —          |
| Throw & Schematics:                                                                       |                                                                                   |                                                                                   |                                                                                   | DPST                                |  |                                                                                   |                                                                                   |                     | DPDT    |  |         |                |                | Note: Terminal numbers are on the switch |     |            |

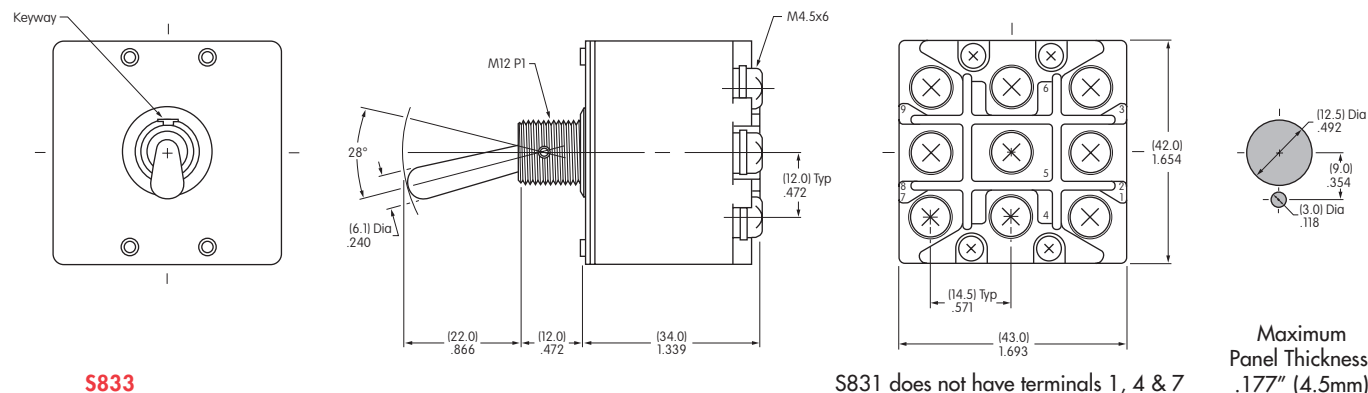
**Notes:** Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section. Optional Splashproof Boot Assembly: AT401 boot plus hex nut & o-ring. See Accessories & Hardware section.



### 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<br> | Center<br> | Up<br> | Resistive |                     |        |         | Inductive                                                                            |                |                                          |  |
|                                                                                           |  |  |  |                                                                                     |                                                                                             |                                                                                               |                                                                                           | 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            |                                          |  |
| Throw & Schematics:                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                             |                                                                                               |                                                                                           |           |                     |        |         |                                                                                      |                | Note: Terminal numbers are on the switch |  |
| 3PST                                                                                      |                                                                                     |                                                                                     |                                                                                     |  |                                                                                             |                                                                                               |                                                                                           | 3PDT      |                     |        |         |  |                |                                          |  |

**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.



## DOUBLE POLE WITH SCREW LUG & FLATTED LEVER

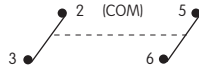
\* UL, cULus & CSA recognized only when ordered with marking on switch (see General Specs)

| * UL, cULus & CSA recognized only<br>when ordered with marking on<br>switch (see General Specs) |                                                                                   |                                                                                   |                                                                                   | Toggle Position/Connected Terminals |                                                                                   |                                                                                   |                                                                                   |        |         | Electrical Capacity |         |         |        |          |                     |         |    |    |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|---------|---------------------|---------|---------|--------|----------|---------------------|---------|----|----|
| Model                                                                                           | * Approvals                                                                       |                                                                                   |                                                                                   | Pole & Throw                        | Down                                                                              |                                                                                   | Center                                                                            | Up     |         | Resistive           |         |         |        |          | Inductive L/R = 3ms |         |    |    |
|                                                                                                 |  |  |  |                                     |  |  |  | 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 |

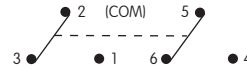
( ) capacity is due to wiring. Refer to instructions below.

Throw & Schematics:

DPST

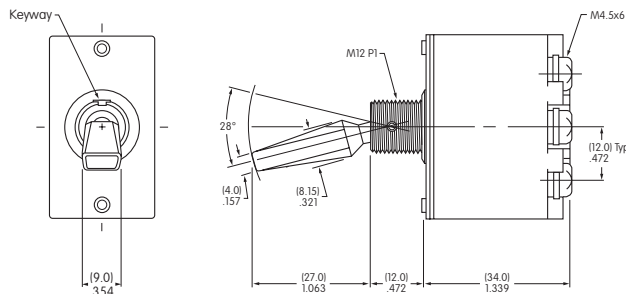


DPDT

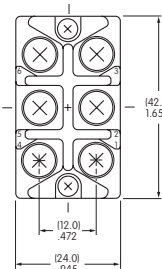


Note: Terminal numbers are on the switch

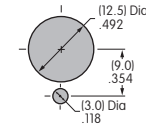
Notes: Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.



### Double Pole



S821D does not have terminals 1 & 4



Maximum Panel Thickness: .177" (4.5mm)



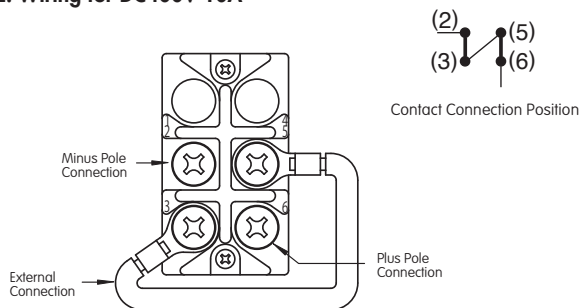
S822D

## 400V DC WIRING INSTRUCTIONS

### 1. DC Switch Use

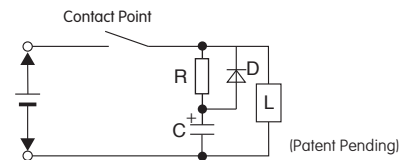
- Middle terminal shall be the minus pole when using DC circuit. Switch case is marked with (+) and (-).
- Do not store near (5cm) highly magnetic items.
- If actuation is interrupted when switching from ON to OFF, arcing may continue and switch could be burned.

### 2. Wiring for DC400V 10A



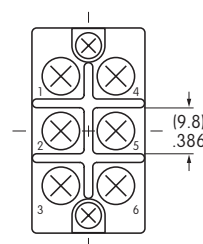
### 3. Inductive Load

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.

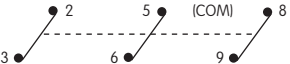


### THREE POLE WITH SCREW LUG & FLATTED LEVER

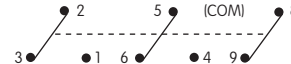
| * UL, cULus & CSA recognized only when ordered with marking on switch (see General Specs) |                                                                                   |                                                                                   |                                                                                   | Toggle Position/Connected Terminals |                                                                                   |                                                                                   |                                                                                   | Electrical Capacity |        |         |         |                     |        |         |         |
|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------|--------|---------|---------|---------------------|--------|---------|---------|
| Model                                                                                     | * Approvals                                                                       |                                                                                   |                                                                                   | Pole & Throw                        | Down                                                                              | Center                                                                            | Up                                                                                | Resistive           |        |         |         | Inductive L/R = 3ms |        |         |         |
|                                                                                           |  |  |  |                                     |  |  |  | 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:

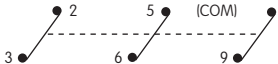
3PST



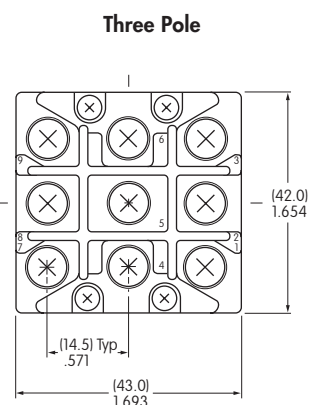
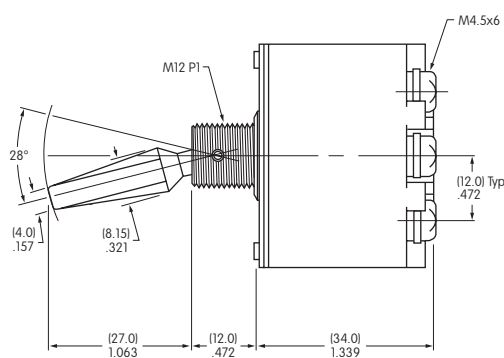
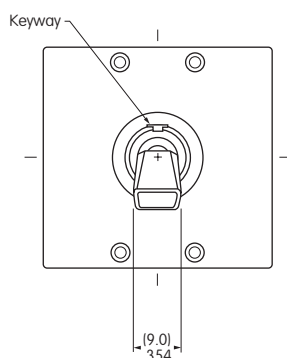
3PDT



Note: Terminal numbers are on the switch

|                                |  |                                                                                        |  |  |  |                                                                                         |  |  |  |                                          |  |  |  |  |  |
|--------------------------------|--|----------------------------------------------------------------------------------------|--|--|--|-----------------------------------------------------------------------------------------|--|--|--|------------------------------------------|--|--|--|--|--|
| <b>Throw &amp; Schematics:</b> |  | 3PST  |  |  |  | 3PDT  |  |  |  | Note: Terminal numbers are on the switch |  |  |  |  |  |
|--------------------------------|--|----------------------------------------------------------------------------------------|--|--|--|-----------------------------------------------------------------------------------------|--|--|--|------------------------------------------|--|--|--|--|--|

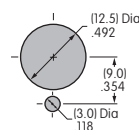
**Notes:** Standard Hardware: AT503M Face Hex Nut, AT506M Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.



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

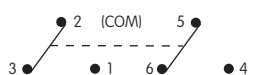


**S832D**

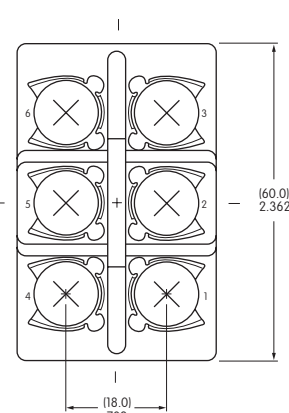
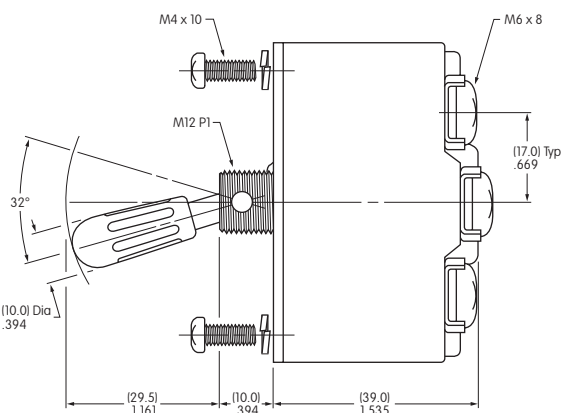
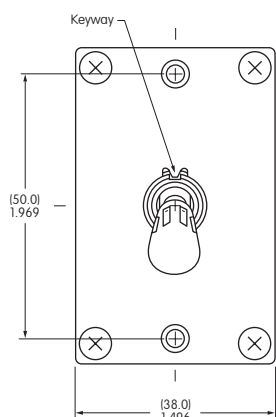


Maximum  
Panel Thickness:  
.177" (4.5mm)

## DOUBLE POLE WITH SCREW LUG

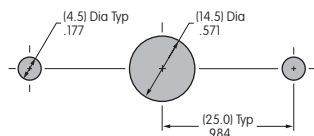
| Model                          | Approvals<br>  | Pole & Throw | Toggle Position/Connected Terminals                                                         |                                                                                             |                                                                                         | Electrical Capacity                      |         |        |                |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------|---------|--------|----------------|
|                                |                                                                                                                                                                                  |              | Down<br>   | Center<br> | Up<br> | Resistive                                |         |        | Inductive      |
|                                |                                                                                                                                                                                  |              | Keyway<br> |                                                                                             |                                                                                         | AC 125V                                  | AC 250V | DC 30V | AC 125V PF 0.6 |
| <b>S732</b>                    | — —                                                                                                                                                                              | DPDT         | ON 2-3 5-6                                                                                  | NONE                                                                                        | ON 2-1 5-4                                                                              | 50A                                      | 30A     | 50A    | 25A            |
| <b>Throw &amp; Schematics:</b> |                                                                                                                                                                                  |              |            |                                                                                             |                                                                                         | 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.



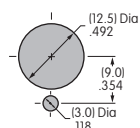
Cap of phenolic resin is black

### Panel Mount with Mounting Screws

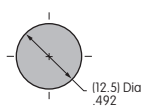


Maximum  
Panel Thickness:  
.158" (4.0mm)

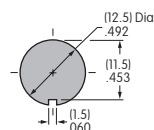
### Panel Mount with Bushing Hardware



Maximum  
Panel Thickness:  
.079" (2.0mm)



Maximum  
Panel Thickness:  
.118" (3.0mm)



Maximum  
Panel Thickness:  
.118" (3.0mm)



**S732**

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

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,  
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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