

### GENERAL SPECIFICATIONS FOR S301 ~ S339

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

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













#### Other Ratings

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


#### Materials & Finishes


- Toggle:** Polyamide for flatted lever; brass with chrome plating for all others
- Bushing:** Brass with chrome plating
- Case:** Melamine phenol for S300s; phenolic resin for S330s
- Case Cover:** Steel with zinc plating
- Movable Contact:** Copper with silver plating
- Movable & Stationary Contacts:** Silver alloy capped on copper with silver plating
- Terminals:** Brass with silver plating

### SINGLE POLE WITH SOLDER LUG

| Model | Approvals   | Pole & Throw | Toggle Position/Connected Terminals   |   |   |           |         |        | Electrical Capacity            |     |  |  | Angle of Throw |
|-------|---|--------------|---|---|---|-----------|---------|--------|--------------------------------|-----|--|--|----------------|
|       |   |              | Down<br> | Center<br> | Up<br> | Resistive |         |        | Inductive<br>AC 125V<br>PF 0.6 |     |  |  |                |
|       |   |              |   |   |   | AC 125V   | AC 250V | DC 30V |                                |     |  |  |                |
| S301  |   | SPST         | ON 1-3  | NONE  | OFF —   | 15A       | 6A      | 20A    | 10A                            | 32° |  |  |                |
| S302  |   | SPDT         | ON 2-3  | NONE  | ON 2-1  | 15A       | 6A      | 20A    | 10A                            | 32° |  |  |                |
| S303  |   | SPDT         | ON 2-3  | OFF   | ON 2-1  | 15A       | 6A      | 20A    | 10A                            | 32° |  |  |                |
| S305  | —    | SPDT         | ON 2-3  | NONE  | MOM 2-1   | 15A       | 6A      | 20A    | 8A                             | 32° |  |  |                |
| S308  | —    | SPDT         | MOM 2-3   | OFF   | MOM 2-1   | 15A       | 6A      | 20A    | 8A                             | 32° |  |  |                |
| S309  | —    | SPDT         | ON 2-3  | OFF   | MOM 2-1   | 15A       | 6A      | 20A    | 8A                             | 32° |  |  |                |

**Throw & Schematics:**

SPST  INTERNAL CONNECTION

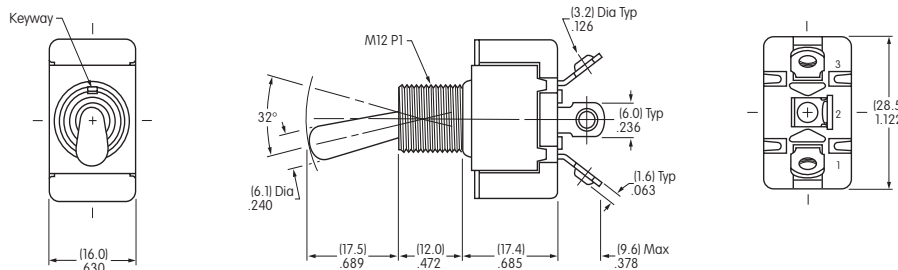
SPDT  2 (COM)

Note: Terminal numbers are on the switch.

- Standard Hardware: AT503 Face Hex Nut, AT506 Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware Index (page Y1) for details.
- Solder lug terminal hole accommodates one 10-gauge solid or stranded wire.



S301



Max. Panel Thickness  
4.7mm (.185")

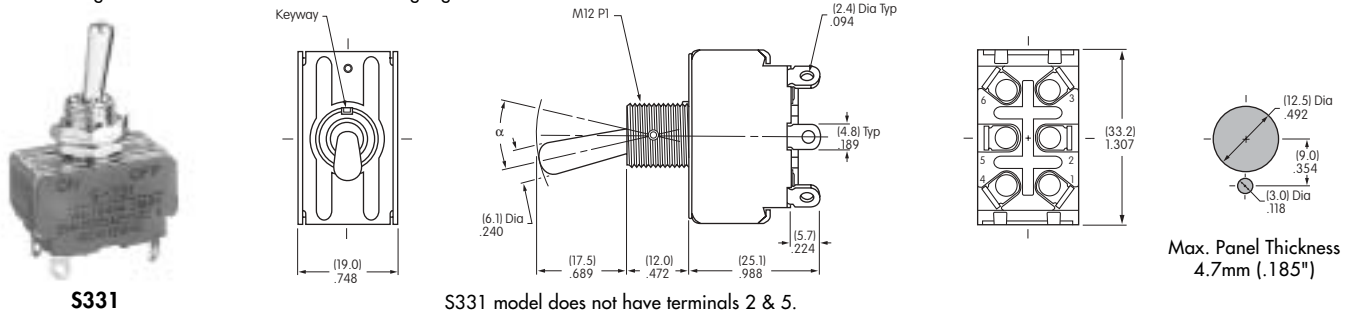
S301 model does not have terminal 2.

### DOUBLE POLE WITH SOLDER LUG

| Model | Approvals | Pole & Throw | Toggle Position/Connected Terminals |         |      |     |           |         | Electrical Capacity |                                |     |     | α = Angle of Throw |
|-------|-----------|--------------|-------------------------------------|---------|------|-----|-----------|---------|---------------------|--------------------------------|-----|-----|--------------------|
|       |           |              | Down<br>Keyway                      | Center  | Up   |     | Resistive |         |                     | Inductive<br>AC 125V<br>PF 0.6 |     |     |                    |
|       |           |              |                                     |         |      |     | AC 125V   | AC 250V | DC 30V              |                                |     |     |                    |
| S331  | RU SF     | DPST         | ON                                  | 1-3 4-6 | NONE | OFF | —         | 25A     | 25A                 | 25A                            | 10A | 25° |                    |
| S332  | RU SF     | DPDT         | ON                                  | 2-3 5-6 | NONE | ON  | 2-1 5-4   | 25A     | 15A                 | 25A                            | 10A | 25° |                    |
| S333  | RU SF     | DPDT         | ON                                  | 2-3 5-6 | OFF  | ON  | 2-1 5-4   | 25A     | 15A                 | 25A                            | 10A | 30° |                    |
| S335  | RU SF     | DPDT         | ON                                  | 2-3 5-6 | NONE | MOM | 2-1 5-4   | 15A     | 6A                  | 20A                            | 8A  | 25° |                    |
| S338  | RU —      | DPDT         | MOM                                 | 2-3 5-6 | OFF  | MOM | 2-1 5-4   | 15A     | 6A                  | 20A                            | 8A  | 25° |                    |
| S339  | RU —      | DPDT         | ON                                  | 2-3 5-6 | OFF  | MOM | 2-1 5-4   | 15A     | 6A                  | 20A                            | 8A  | 25° |                    |

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

- Standard Hardware: AT503 Face Hex Nut, AT506 Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware Index (page Y1) for details.
- Solder lug terminal hole accommodates one 12-gauge solid or stranded wire.



S331

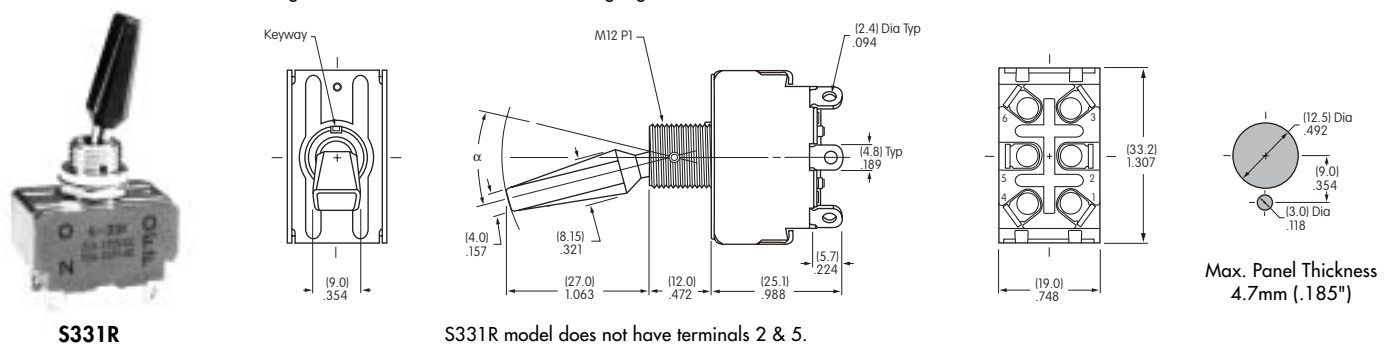
S331 model does not have terminals 2 & 5.

### DOUBLE POLE WITH SOLDER LUG & FLATTED LEVER

| Model | Approvals | Pole & Throw | Toggle Position/Connected Terminals |         |      |     |           |         | Electrical Capacity |                                |     |     | α = Angle of Throw |
|-------|-----------|--------------|-------------------------------------|---------|------|-----|-----------|---------|---------------------|--------------------------------|-----|-----|--------------------|
|       |           |              | Down<br>Keyway                      | Center  | Up   |     | Resistive |         |                     | Inductive<br>AC 125V<br>PF 0.6 |     |     |                    |
|       |           |              |                                     |         |      |     | AC 125V   | AC 250V | DC 30V              |                                |     |     |                    |
| S331R | RU —      | DPST         | ON                                  | 1-3 4-6 | NONE | OFF | —         | 25A     | 25A                 | 25A                            | 10A | 25° |                    |
| S332R | RU —      | DPDT         | ON                                  | 2-3 5-6 | NONE | ON  | 2-1 5-4   | 25A     | 15A                 | 25A                            | 10A | 25° |                    |
| S333R | RU —      | DPDT         | ON                                  | 2-3 5-6 | OFF  | ON  | 2-1 5-4   | 25A     | 15A                 | 25A                            | 10A | 30° |                    |
| S338R | RU —      | DPDT         | MOM                                 | 2-3 5-6 | OFF  | MOM | 2-1 5-4   | 15A     | 6A                  | 20A                            | 8A  | 25° |                    |
| S339R | RU —      | DPDT         | ON                                  | 2-3 5-6 | OFF  | MOM | 2-1 5-4   | 15A     | 6A                  | 20A                            | 8A  | 25° |                    |

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













- Standard Hardware: AT504M Knurled Nut, AT506 Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware Index (page Y1) for details.
- Solder Lug terminal hole accommodates one 12-gauge solid or stranded wire.





S331R

S331R model does not have terminals 2 & 5.

### SINGLE POLE WITH SCREW LUG

| Model | Approvals   | Pole & Throw | Toggle Position/Connected Terminals   |   |   | Electrical Capacity |         |        |                | Angle of Throw |
|-------|---|--------------|---|---|---|---------------------|---------|--------|----------------|----------------|
|       |   |              | Down<br> | Center<br> | Up<br> | Resistive           |         |        | Inductive      |                |
|       |   |              |   |   |   | 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  | MOM 2-1   | 15A                 | 6A      | 20A    | 8A             | 32°            |
| S308T | —    | SPDT         | MOM 2-3   | OFF   | MOM 2-1   | 15A                 | 6A      | 20A    | 8A             | 32°            |
| S309T | —    | SPDT         | ON 2-3  | OFF   | MOM 2-1   | 15A                 | 6A      | 20A    | 8A             | 32°            |

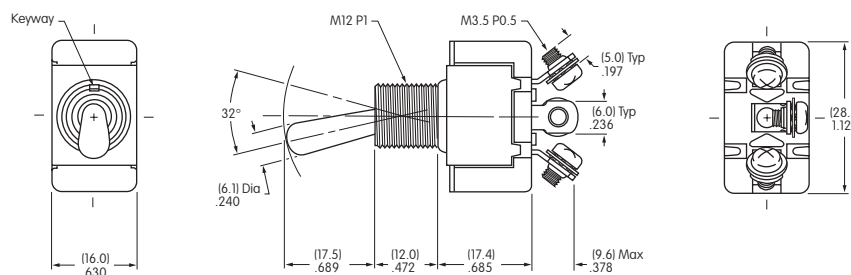
**Throw & Schematics:** SPST  INTERNAL CONNECTION SPDT  2 (COM)

Note: Terminal numbers are on the switch.

• Standard Mounting Hardware: AT503 Face Hex Nut, AT506 Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut.












S301T

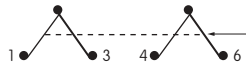
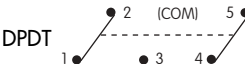


Max. Panel Thickness  
4.7mm (.185")

S301T model does not have terminal 2.

### DOUBLE POLE WITH SCREW LUG

| Model | Approvals   | Pole & Throw | Toggle Position/Connected Terminals   |   |   | Electrical Capacity |         |        |                | α = Angle of 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  | MOM 2-1 5-4   | 15A                 | 6A      | 20A    | 8A             | 25°                |
| S338T |  — | DPDT         | MOM 2-3 5-6   | OFF   | MOM 2-1 5-4   | 15A                 | 6A      | 20A    | 8A             | 25°                |
| S339T |  — | DPDT         | ON 2-3 5-6  | OFF   | MOM 2-1 5-4   | 15A                 | 6A      | 20A    | 8A             | 25°                |

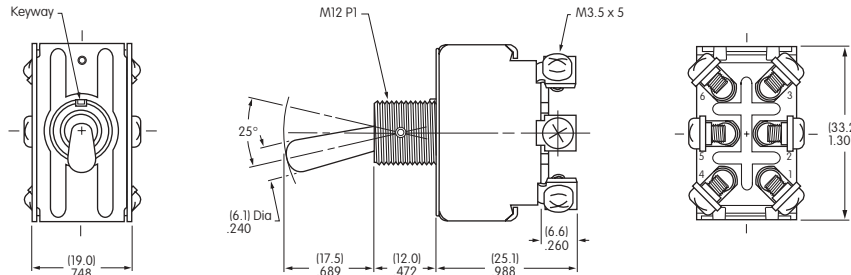
**Throw & Schematics:** DPST  INTERNAL CONNECTION DPDT  2 (COM) 5

Note: Terminal numbers are on the switch.

• Standard Mounting Hardware: AT503 Face Hex Nut, AT506 Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut.












S331T



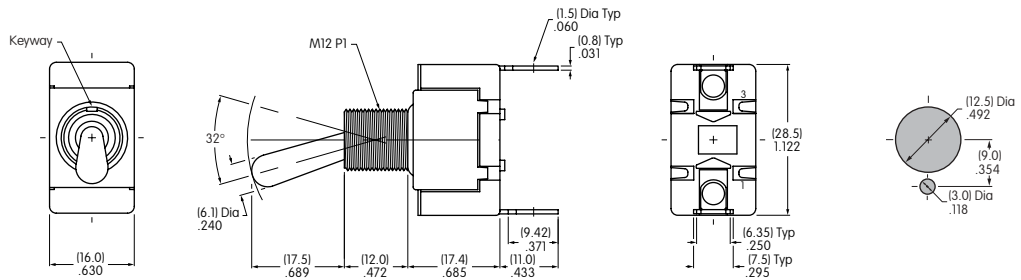
Max. Panel Thickness  
4.7mm (.185")

S331T model does not have terminals 2 & 5.

### SINGLE POLE WITH QUICK CONNECT

| Model   | Approvals   | Pole & Throw | Toggle Position/Connected Terminals   |   |   |   | Electrical Capacity |        |                |     | Angle of Throw |
|---|---|--------------|---|---|---|---|---------------------|--------|----------------|-----|----------------|
|   |   |              | Down<br>   | Center<br> | Up<br>     | Resistive                                 |                     |        | Inductive      |     |                |
|   |   |              |   |   |   | AC 125V                                   | AC 250V             | DC 30V | AC 125V PF 0.6 |     |                |
| <b>S301F</b>  | —  | SPST         | ON 1-3<br> | NONE  | OFF —<br> | 15A                                       | 6A                  | 20A    | 10A            | 32° |                |
| <b>Throw &amp; Schematics:</b> SPST  INTERNAL CONNECTION  SPDT  |   |              |   |   |   | Note: Terminal numbers are on the switch. |                     |        |                |     |                |

• Standard Mounting Hardware: AT503 Face Hex Nut, AT506 Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut.









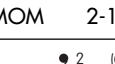





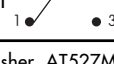





Max. Panel Thickness  
4.7mm (.185")

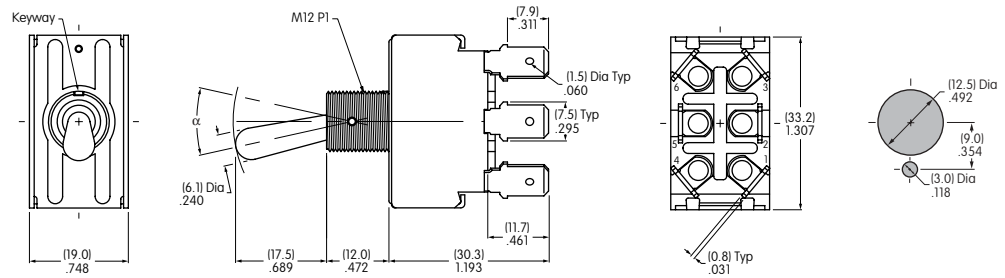
**S301F**

S301F model does not have terminal 2.

### DOUBLE POLE WITH QUICK CONNECT

| Model  | Approvals   | Pole & Throw | Toggle Position/Connected Terminals   |   |  |   | Electrical Capacity |        |                |     | α = Angle of Throw |
|--|---|--------------|---|---|--|---|---------------------|--------|----------------|-----|--------------------|
|  |   |              | Down<br>       | Center<br> | Up<br>          | Resistive                                 |                     |        | Inductive      |     |                    |
|  |   |              |   |   |  | AC 125V                                   | AC 250V             | DC 30V | AC 125V PF 0.6 |     |                    |
| <b>S331F</b>   |  — | DPST         | ON 1-3 4-6<br> | NONE  | OFF —<br>       | 25A                                       | 25A                 | 25A    | 10A            | 25° |                    |
| <b>S332F</b>   |  — | DPDT         | ON 2-3 5-6<br> | NONE  | ON 2-1 5-4<br>  | 25A                                       | 15A                 | 25A    | 10A            | 25° |                    |
| <b>S333F</b>   |  — | DPDT         | ON 2-3 5-6<br> | OFF   | ON 2-1 5-4<br>  | 25A                                       | 15A                 | 25A    | 10A            | 30° |                    |
| <b>S335F</b>   |  — | DPDT         | ON 2-3 5-6<br> | NONE  | MOM 2-1 5-4<br> | 15A                                       | 6A                  | 20A    | 8A             | 25° |                    |
| <b>Throw &amp; Schematics:</b> DPST  INTERNAL CONNECTION  DPDT  |   |              |   |   |  | Note: Terminal numbers are on the switch. |                     |        |                |     |                    |

• Standard Mounting Hardware: AT503 Face Hex Nut, AT506 Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut.



Max. Panel Thickness  
4.7mm (.185")

**S332F**

S331F model does not have terminals 2 & 5.

## GENERAL SPECIFICATIONS FOR S31 ~ S49

### Electrical Capacity (Resistive & Inductive Load)

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

### Other Ratings

**Contact Resistance:** 10 milliohms maximum  
**Insulation Resistance:** 1,000 megohms minimum @ 500V DC  
**Dielectric Strength:** 2,000V AC minimum  
**Mechanical Life:** 50,000 operations minimum  
**Electrical Life:** 25,000 operations minimum  
**Angle of Throw ( $\alpha$ ):** Shown on following tables

### Materials & Finishes

**Toggle:** PBT resin for flatted lever; brass with chrome plating for all others  
**Bushing:** Brass with chrome plating  
**Case:** Phenolic resin  
**Case Cover:** Steel with 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 silver plating

### Environmental Data

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

### Installation

**Mounting Torque:** 30 kgf/cm (26 lb/in) for double nut; 15 kgf/cm (13 lb/in) for single nut  
**Maximum Panel Thickness:** Shown beneath panel cutout in switch dimension drawings  
**Soldering Time & Temperature:** 3 seconds @ 350°C or 5 seconds @ 270°C

### Standards & Certifications

**UL Recognized:** Designated with UL recognized symbol beside part numbers on following pages  
 See Supplement Index (page Z1) to find UL rating details. UL File No. E44145  
 Add "/U" to end of part number to order UL mark on switch.  
**CSA Certified:** Designated with CSA certified symbol beside part numbers on following pages  
 See Supplement Index (page Z1) to find CSA rating details. File No. LR23535  
 Add "/C" to end of part number to order CSA mark on switch.

### THREE POLE WITH SOLDER LUG

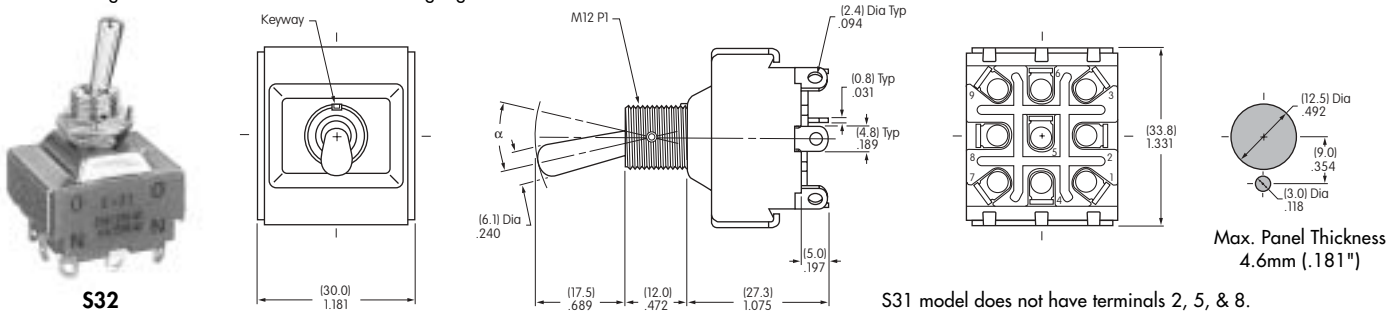
\*See page Z1 for UL detail.

| Model | Approvals | Pole & Throw | Toggle Position/Connected Terminals |             |      |           |             |        | Electrical Capacity            |     |     |     | α = Angle of Throw |
|-------|-----------|--------------|-------------------------------------|-------------|------|-----------|-------------|--------|--------------------------------|-----|-----|-----|--------------------|
|       |           |              | Down<br>Keyway                      | Center      | Up   | Resistive |             |        | Inductive<br>AC 125V<br>PF 0.6 |     |     |     |                    |
|       |           |              |                                     |             |      | AC 125V   | AC 250V     | DC 30V |                                |     |     |     |                    |
| S31   | RU* (SF)  | 3P2ST        | ON                                  | 1-3 4-6 7-9 | NONE | OFF       | —           | 25A    | 9A                             | 20A | 10A | 25° |                    |
| S32   | RU* (SF)  | 3PDT         | ON                                  | 2-3 5-6 8-9 | NONE | ON        | 2-1 5-4 8-7 | 25A    | 9A                             | 20A | 10A | 25° |                    |
| S33   | RU* (SF)  | 3PDT         | ON                                  | 2-3 5-6 8-9 | OFF  | ON        | 2-1 5-4 8-7 | 25A    | 9A                             | 20A | 10A | 30° |                    |
| S35   | RU (SF)   | 3PDT         | ON                                  | 2-3 5-6 8-9 | NONE | MOM       | 2-1 5-4 8-7 | 15A    | 6A                             | 20A | 8A  | 25° |                    |
| S38   | RU (SF)   | 3PDT         | MOM                                 | 2-3 5-6 8-9 | OFF  | MOM       | 2-1 5-4 8-7 | 15A    | 6A                             | 15A | 8A  | 25° |                    |
| S39   | RU (SF)   | 3PDT         | ON                                  | 2-3 5-6 8-9 | OFF  | MOM       | 2-1 5-4 8-7 | 15A    | 6A                             | 15A | 8A  | 25° |                    |

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

Note: Terminal numbers are on the switch.

- Standard Hardware: AT503 Face Hex Nut, AT506 Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware Index (page Y1) for details.
- Solder lug terminal hole accommodates one 12-gauge solid or stranded wire.



S31 model does not have terminals 2, 5, & 8.

### FOUR POLE WITH SOLDER LUG

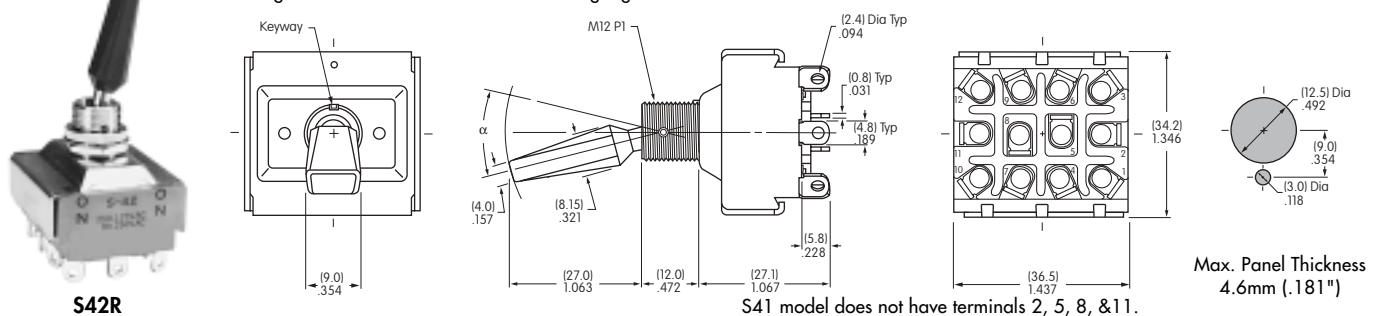
\*See page Z1 for UL & CSA details.

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

**Throw & Schematics:** 4PST INTERNAL CONNECTION 4PDT

Note: Terminal numbers are on the switch.




- Standard Hardware: AT503 Face Hex Nut, AT506 Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware Index (page Y1) for details.
- Solder lug terminal hole accommodates one 12-gauge solid or stranded wire.



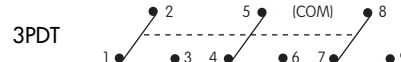
S41 model does not have terminals 2, 5, 8, & 11.



### THREE POLE WITH SCREW LUG

| *See page Z1 for CSA detail. |           |              | Toggle Position/Connected Terminals  |   |   |           |             | Electrical Capacity |               |               |     |    | α = Angle of Throw |
|------------------------------|-----------|--------------|--|---|---|-----------|-------------|---------------------|---------------|---------------|-----|----|--------------------|
| Model                        | Approvals | Pole & Throw | Down   | Center  | Up  | Resistive |             |                     | Inductive     |               |     |    |                    |
|                              |           |              | Keyway  |  |  | AC 125V   | AC 250V     | DC 30V              | AC125V PF 0.6 | AC250V PF 0.6 |     |    |                    |
| S31T                         | — (SP)*   | 3PST         | ON   | 1-3 4-6 7-9   | NONE  | OFF       | —           | 25A                 | 9A            | 20A           | 10A | 5A | 25°                |
| S32T                         | — (SP)*   | 3PDT         | ON   | 2-3 5-6 8-9   | NONE  | ON        | 2-1 5-4 8-7 | 25A                 | 9A            | 20A           | 10A | 5A | 25°                |
| S33T                         | — (SP)*   | 3PDT         | ON   | 2-3 5-6 8-9   | OFF   | ON        | 2-1 5-4 8-7 | 25A                 | 9A            | 20A           | 10A | 5A | 30°                |

#### Throw & Schematics:

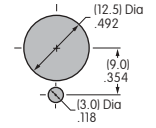
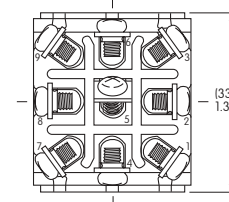
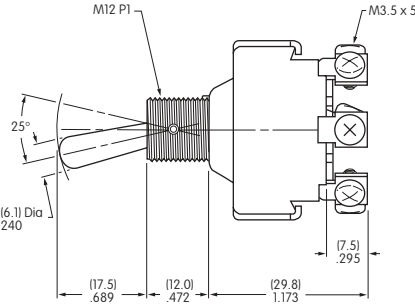
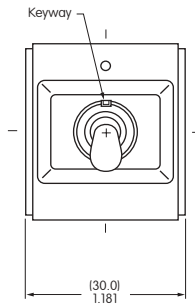


Note: Terminal numbers are on the switch.

• Standard Hardware: AT503 Face Hex Nut, AT506 Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware Index (page Y1) for details.






S32T



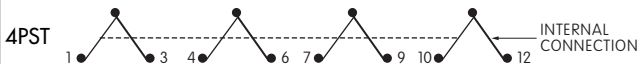
Max. Panel Thickness 4.6mm (.181")

S31T model does not have terminals 2, 5, & 8.

### FOUR POLE WITH SCREW LUG

| *See page Z1 for CSA detail. |           |              | Toggle Position/Connected Terminals  |   |   |           |                   | Electrical Capacity |               |               |     |    | α = Angle of Throw |
|------------------------------|-----------|--------------|--|---|---|-----------|-------------------|---------------------|---------------|---------------|-----|----|--------------------|
| Model                        | Approvals | Pole & Throw | Down   | Center  | Up  | Resistive |                   |                     | Inductive     |               |     |    |                    |
|                              |           |              | Keyway  |  |  | AC 125V   | AC 250V           | DC 30V              | AC125V PF 0.6 | AC250V PF 0.6 |     |    |                    |
| S41T                         | — (SP)*   | 4PST         | ON   | 1-3 4-6 7-9 10-12   | NONE  | OFF       | —                 | 25A                 | 9A            | 20A           | 10A | 5A | 25°                |
| S42T                         | — (SP)*   | 4PDT         | ON   | 2-3 5-6 8-9 11-12   | NONE  | ON        | 2-1 5-4 8-7 11-10 | 25A                 | 9A            | 20A           | 10A | 5A | 25°                |
| S43T                         | — (SP)*   | 4PDT         | ON   | 2-3 5-6 8-9 11-12   | OFF   | ON        | 2-1 5-4 8-7 11-10 | 25A                 | 9A            | 20A           | 10A | 5A | 30°                |

#### Throw & Schematics:

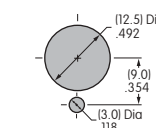
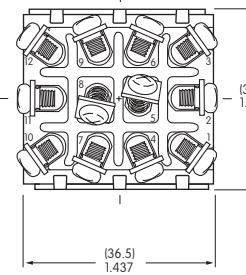
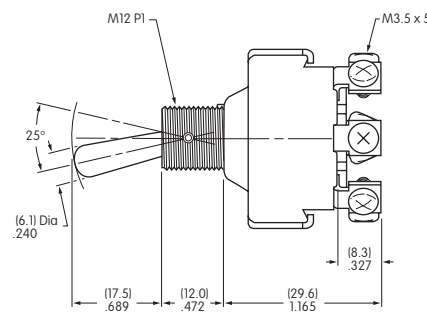
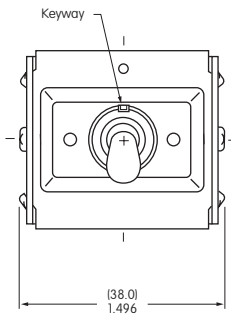


Note: Terminal numbers are on the switch.

• Standard Hardware: AT503 Face Hex Nut, AT506 Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware Index (page Y1) for details.









S42T

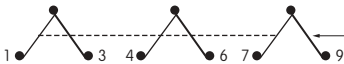



Max. Panel Thickness 4.6mm (.181")

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

### THREE POLE WITH QUICK CONNECT

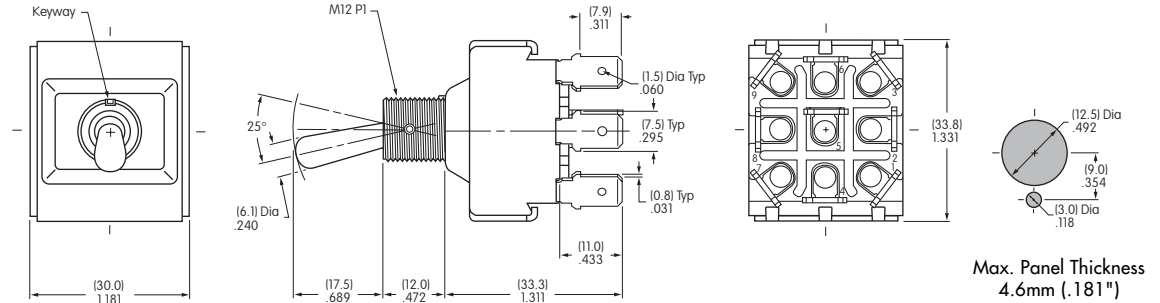
| *See page Z1 for UL detail. |   |              | Toggle Position/Connected Terminals   |   |   |           |             |        | Electrical Capacity |     |     |     | α = Angle of Throw |
|-----------------------------|---|--------------|---|---|---|-----------|-------------|--------|---------------------|-----|-----|-----|--------------------|
| Model                       | Approvals   | Pole & Throw | Down<br> | Center<br> | Up<br> | Resistive |             |        | Inductive           |     |     |     |                    |
|                             |   |              |   |   |   | AC 125V   | AC 250V     | DC 30V | AC 125V PF 0.6      |     |     |     |                    |
| S31F                        |  * | 3PST         | ON  | 1-3 4-6 7-9   | NONE  | OFF       | —           | 25A    | 9A                  | 20A | 10A | 25° |                    |
| S32F                        |  * | 3PDT         | ON  | 2-3 5-6 8-9   | NONE  | ON        | 2-1 5-4 8-7 | 25A    | 9A                  | 20A | 10A | 25° |                    |
| S33F                        |  * | 3PDT         | ON  | 2-3 5-6 8-9   | OFF   | ON        | 2-1 5-4 8-7 | 25A    | 9A                  | 20A | 10A | 30° |                    |

**Throw & Schematics:** 3PST  INTERNAL CONNECTION  Note: Terminal numbers are on the switch.

• Standard Hardware: AT503 Face Hex Nut, AT506 Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware Index (page Y1) for details.









S32F





S31F model does not have terminals 2, 5, & 8.

Max. Panel Thickness  
4.6mm (.181")

### FOUR POLE WITH QUICK CONNECT

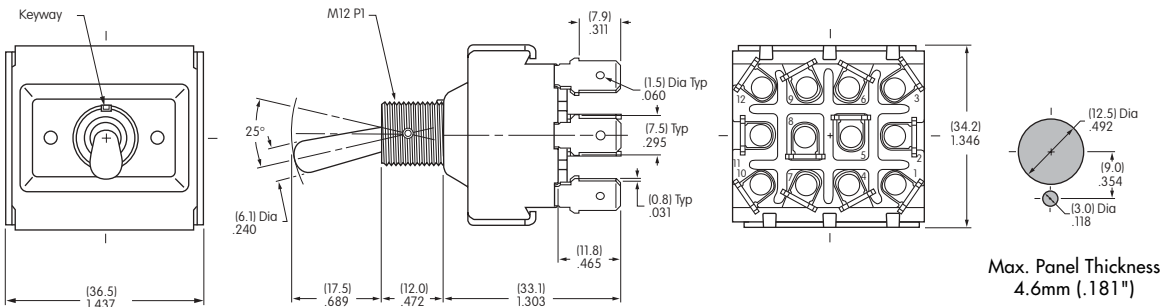
| *See page Z1 for UL detail. |   |              | Toggle Position/Connected Terminals   |   |  |           |                   |        | Electrical Capacity |     |     |     | α = Angle of Throw |
|-----------------------------|---|--------------|---|---|--|-----------|-------------------|--------|---------------------|-----|-----|-----|--------------------|
| Model                       | Approvals   | Pole & Throw | Down<br> | Center<br> | Up<br> | Resistive |                   |        | Inductive           |     |     |     |                    |
|                             |   |              |   |   |  | AC 125V   | AC 250V           | DC 30V | AC 125V PF 0.6      |     |     |     |                    |
| S41F                        |  * | 4PST         | ON  | 1-3 4-6 7-9 10-12   | NONE   | OFF       | —                 | 25A    | 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 | 25A    | 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 | 25A    | 9A                  | 20A | 10A | 30° |                    |

**Throw & Schematics:** 4PST  INTERNAL CONNECTION  Note: Terminal numbers are on the switch.

• Standard Hardware: AT503 Face Hex Nut, AT506 Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware Index (page Y1) for details.



S42F



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

Max. Panel Thickness  
4.6mm (.181")



## GENERAL SPECIFICATIONS FOR S421 ~ S429

### 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                              |
| <b>Mechanical Life:</b>                      | 50,000 operations minimum for all other models |
| <b>Electrical Life:</b>                      | 15,000 operations minimum                      |
| <b>Angle of Throw (<math>\alpha</math>):</b> | Shown in tables on following pages             |

### Materials & Finishes

|                             |   |
|-----------------------------|---|
| <b>Toggle:</b>              | Brass with chrome plating                         |
| <b>Bushing:</b>             | Brass with chrome plating                         |
| <b>Case:</b>                | Phenolic resin                                    |
| <b>Case Cover:</b>          | Steel with zinc plating                           |
| <b>Movable Contactor:</b>   | Copper with silver plating                        |
| <b>Movable Contacts:</b>    | Silver alloy capped on copper with silver plating |
| <b>Stationary Contacts:</b> | Silver alloy capped on copper with silver plating |
| <b>Terminals:</b>           | Brass with silver plating                         |




### Environmental Data


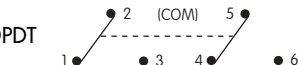
**Operating Temp Range:** -10°C through +70°C (+14°F through +158°F)

### Installation

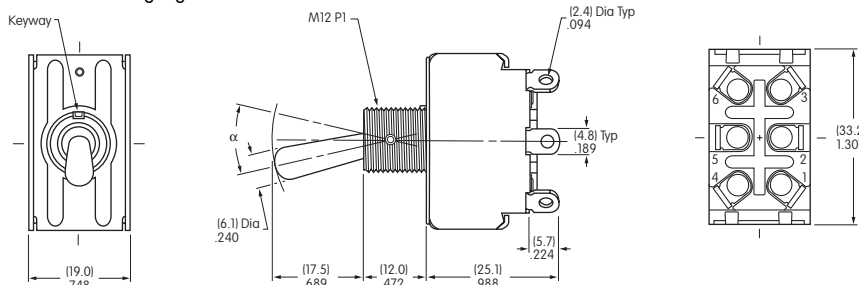
|  |  |
|--|--|
| <b>Mounting Torque:</b>                  | 30 kgf/cm (26 lb/in) for double nut; 15 kgf/cm (13 lb/in) for single nut |
| <b>Maximum Panel Thickness:</b>          | Shown beneath panel cutout in switch dimension drawings                  |
| <b>Soldering Time &amp; Temperature:</b> | 3 seconds @ 350°C or 5 seconds @ 270°C                                   |

### DOUBLE POLE WITH SOLDER LUG

| Model | Approvals | Pole & Throw | Toggle Position/Connected Terminals   |   |   |           |         | Electrical Capacity |         |            |     | α = Angle of Throw |     |
|-------|-----------|--------------|---|---|---|-----------|---------|---------------------|---------|------------|-----|--------------------|-----|
|       |           |              | Down<br> | Center<br> | Up<br> | Resistive |         | Inductive           |         | Motor Load |     |                    |     |
|       |           |              |   |   |   | AC 125V   | AC 250V | AC 125V             | AC 250V | AC 125V    |     |                    |     |
| S421  | — —       | DPST         | ON  | 1-3 4-6   | NONE  | OFF       | —       | 25A                 | 25A     | 25A        | 25A | 750W               | 24° |
| S422  | — —       | DPDT         | ON  | 2-3 5-6   | NONE  | ON        | 2-1 5-4 | 25A                 | 25A     | 25A        | 25A | 750W               | 24° |
| S423  | — —       | DPDT         | ON  | 2-3 5-6   | OFF   | ON        | 2-1 5-4 | 25A                 | 25A     | 25A        | 25A | 750W               | 28° |
| S425  | — —       | DPDT         | ON  | 2-3 5-6   | NONE  | MOM       | 2-1 5-4 | 15A                 | 15A     | 15A        | 15A | 400W               | 24° |
| S428  | — —       | DPDT         | MOM   | 2-3 5-6   | OFF   | MOM       | 2-1 5-4 | 15A                 | 15A     | 15A        | 15A | 400W               | 24° |
| S429  | — —       | DPDT         | ON  | 2-3 5-6   | OFF   | MOM       | 2-1 5-4 | 15A                 | 15A     | 15A        | 15A | 400W               | 24° |

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




- Standard Hardware: AT503 Face Hex Nut, AT506 Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware Index (page Y1) for details.
- Solder lug terminal hole accommodates one 12-gauge solid or stranded wire.

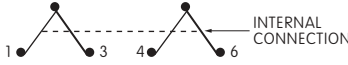
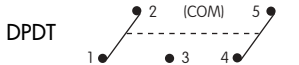


S421 model does not have terminals 2 & 5.

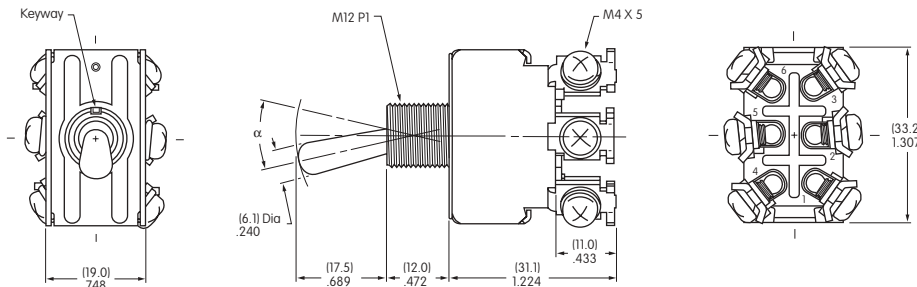
Max. Panel Thickness 4.7mm (.185")

### DOUBLE POLE WITH SCREW LUG

| Model | Approvals | Pole & Throw | Toggle Position/Connected Terminals   |   |   |           |         | Electrical Capacity |         |            |     | α = Angle of Throw |     |
|-------|-----------|--------------|---|---|---|-----------|---------|---------------------|---------|------------|-----|--------------------|-----|
|       |           |              | Down<br> | Center<br> | Up<br> | Resistive |         | Inductive           |         | Motor Load |     |                    |     |
|       |           |              |   |   |   | AC 125V   | AC 250V | AC 125V             | AC 250V | AC 125V    |     |                    |     |
| 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  | MOM       | 2-1 5-4 | 15A                 | 15A     | 15A        | 15A | 400W               | 24° |
| S428T | — —       | DPDT         | MOM   | 2-3 5-6   | OFF   | MOM       | 2-1 5-4 | 15A                 | 15A     | 15A        | 15A | 400W               | 24° |
| S429T | — —       | DPDT         | ON  | 2-3 5-6   | OFF   | MOM       | 2-1 5-4 | 15A                 | 15A     | 15A        | 15A | 400W               | 24° |

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

- Standard Hardware: AT503 Face Hex Nut, AT506 Locking Ring, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware Index (page Y1) for details.



S421T model does not have terminals 2 & 5.

Max. Panel Thickness 4.7mm (.185")