GENERAL SPECIFICATIONS FOR S1 ~ S29

Electrical Capacity (Resistive & Inductive Load)

Power Level: Shown in the following tables

Other Ratings

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

Materials & Finishes

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

Environmental Data

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

Installation

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

Standards & Certifications

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

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

SINGLE POLE WITH SOLDER LUG *

Model	*Approvals	Pole & Throw	Toggle Position/Connected Terminals: Down	Center	Up	Electrical Capacity: Resistive AC 125V	Resistive AC 250V	Resistive DC 30V	Inductive AC 125V PF 0.6	Angle of Throw
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°

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

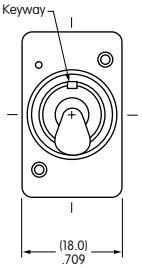
Throw & Schematics: SPST 1 — 3, INTERNAL CONNECTION; SPDT 3 — 2 (COM) — 1

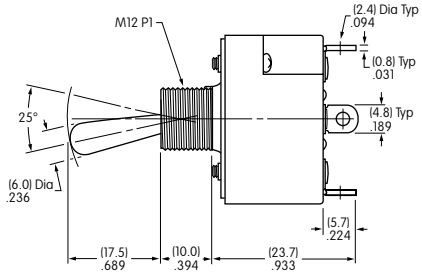
Note: Terminal numbers are actually on the switch

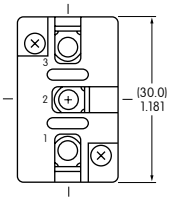
Notes: Standard Hardware: AT504M Knurled Nut, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.
Optional Splashproof Boot Assemblies: AT401 & AT4181 boots plus hex nut & o-ring. See Accessories & Hardware section.
* Wire harness & cable assemblies offered only in Americas.



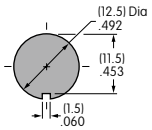
S2A







S1A does not have terminal 2



Maximum Panel Thickness: .158" (4.0mm)

DOUBLE POLE WITH SOLDER LUG *

Model	*Approvals	Pole & Throw	Toggle Position/Connected Terminals: Down	Center	Up	Electrical Capacity: Resistive AC 125V	Resistive AC 250V	Resistive DC 30V	Inductive AC 125V PF 0.6	α = Angle of Throw
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°

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

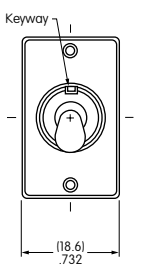
Throw & Schematics: DPST 1 — 3, 4 — 6, INTERNAL CONNECTION; DPDT 3 — 2 (COM) — 1, 6 — 5, 4

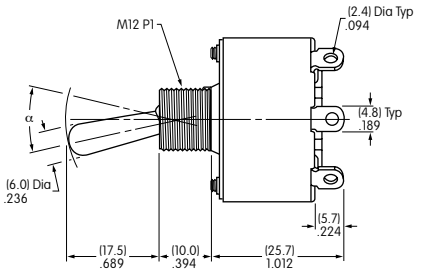
Note: Terminal numbers are actually on the switch

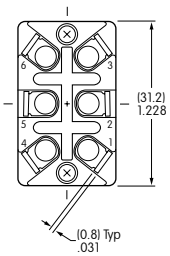
Notes: Standard Hardware: AT504M Knurled Nut, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.
Optional Splashproof Boot Assemblies: AT401 & AT4181 boots plus hex nut & o-ring. See Accessories & Hardware section.
* Wire harness & cables assemblies offered only in Americas.



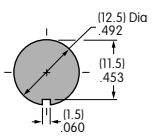
S6A







S21A does not have terminals 2 & 5



Maximum Panel Thickness: .158" (4.0mm)

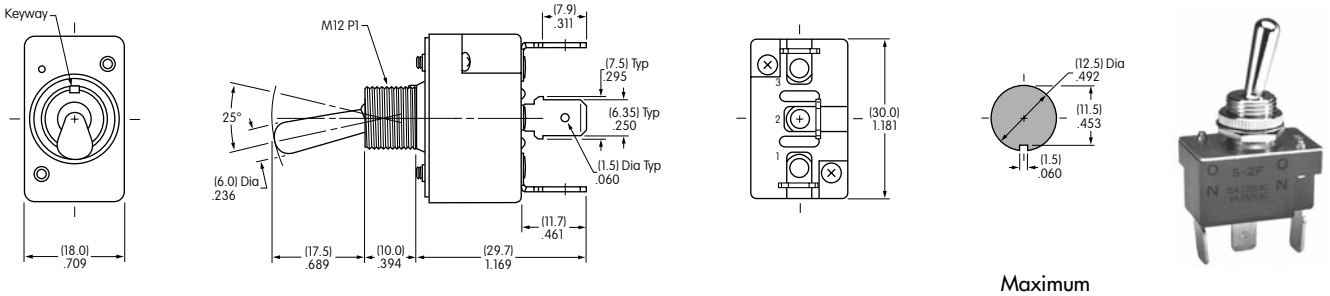
SINGLE POLE WITH QUICK CONNECT

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

Throw & Schematics: SPST 1 — 3 INTERNAL CONNECTION; SPDT 3 — 2 (COM) — 1

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.



S1F does not have terminal 2

Maximum Panel Thickness: .158" (4.0mm)

S2F

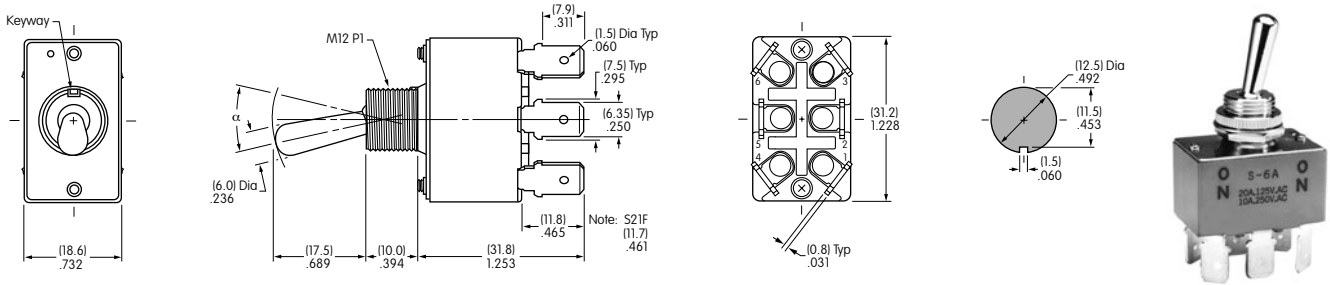
DOUBLE POLE WITH QUICK CONNECT

Model	Approvals		Pole & Throw	Toggle Position/Connected Terminals: Down (Keyway)	Center	Up	Electrical Capacity: Resistive AC 125V	Resistive AC 250V	Resistive DC 30V	Inductive AC 125V PF 0.6	α = Angle of Throw
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 1 — 3, 4 — 6 INTERNAL CONNECTION; DPDT 3 — 2 (COM) — 1, 6 — 5, 4

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.



S21F does not have terminals 2 & 5

Maximum Panel Thickness: .158" (4.0mm)

S6F

SINGLE POLE SOLDER LUG WITH PANEL SEAL *

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

Throw & Schematics: SPST 

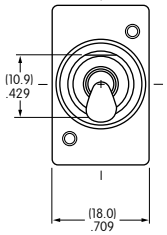
SPDT 

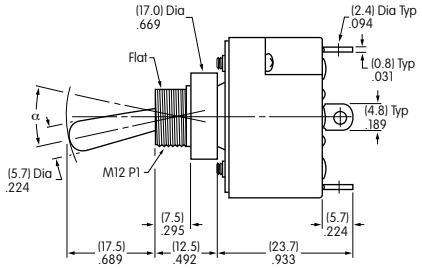
Note: Terminal numbers are actually on the switch

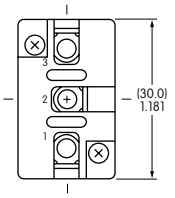
Notes: Standard Hardware: AT503M Face Hex Nut, AT508 Lockwasher, AT537 O-ring. See Accessories & Hardware section.
For **.250" Quick Connect terminals**, add "F" to end of part number. See **Quick Connect terminal** dimensions on previous page. For further information, contact factory.
* Wire harness & cable assemblies offered only in Americas.



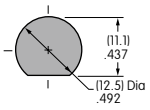
S2AW







S1AW does not have terminal 2

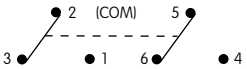


Maximum Panel Thickness: .158" (4.0mm)

DOUBLE POLE SOLDER LUG WITH PANEL SEAL *

Model	Approvals	Pole & Throw	Toggle Position/Connected Terminals ( ) = Momentary: Down (Keyway)	Center	Up	Electrical Capacity: Resistive AC 125V	AC 250V	DC 30V	α = Angle of Throw
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 

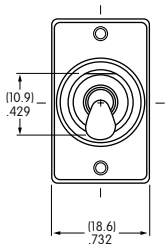
DPDT 

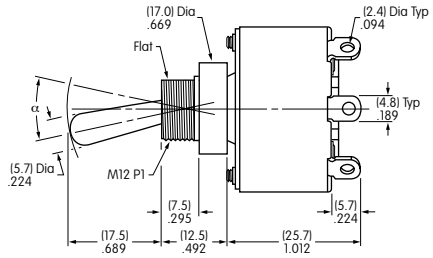
Note: Terminal numbers are actually on the switch

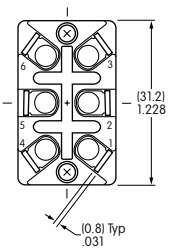
Notes: Standard Hardware: AT503M Face Hex Nut, AT508 Lockwasher, AT537 O-ring. See Accessories & Hardware section.
For **.250" Quick Connect terminals**, add "F" to end of part number. See **Quick Connect terminal** dimensions on previous page. For further information, contact factory.
* Wire harness & cable assemblies offered only in Americas.



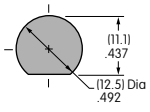
S6AW







S21AW does not have terminals 2 & 5



Maximum Panel Thickness: .158" (4.0mm)

SINGLE POLE SOLDER LUG WITH LOCKING LEVER & PANEL SEAL *

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

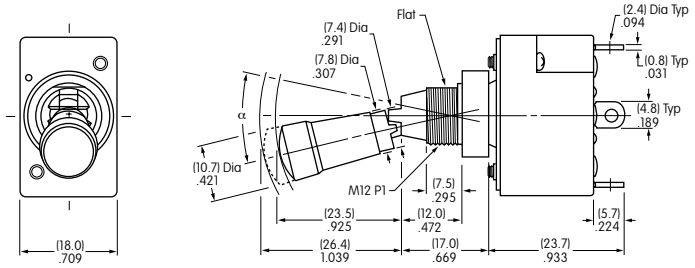
Throw & Schematics: SPST 

SPDT 

Note: Terminal numbers are actually on the switch

Notes: Standard Hardware: AT503M Face Hex Nut, AT508 Lockwasher, AT537 O-ring. See Accessories & Hardware section.

* Wire harness & cable assemblies offered only in Americas.



S1AL does not have terminal 2

Maximum Panel Thickness: .158" (4.0mm)

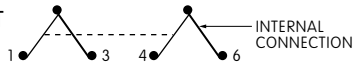


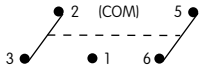
S2AL

DOUBLE POLE SOLDER LUG WITH LOCKING LEVER & PANEL SEAL *

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

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

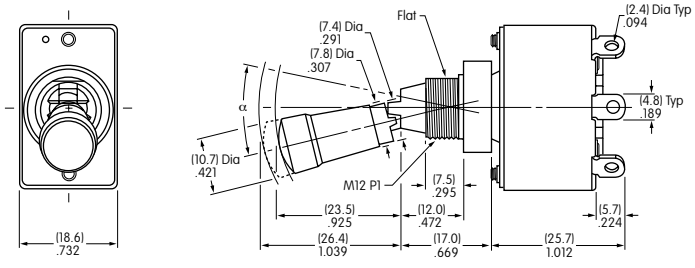
Throw & Schematics: DPST 

DPDT 

Note: Terminal numbers are actually on the switch

Notes: Standard Hardware: AT503M Face Hex Nut, AT508 Lockwasher, AT537 O-ring. See Accessories & Hardware section.

* Wire harness & cable assemblies offered only in Americas.



S21AL does not have terminals 2 & 5

Maximum Panel Thickness: .158" (4.0mm)



S6AL