

GENERAL SPECIFICATIONS FOR S1 ~ S29

Switches Unlimited
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 www.switchesunlimited.com

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
 UL or cULus recognition designated beside part numbers on following pages.
 See Supplement section to find UL or cULus rating details.
 Add "/U" to end of part number to order UL mark on switch.
 Add "/CUL" to end of part number to order cULus mark on switch.

CSA: File No. 023535_0_000
 CSA certification designated beside part numbers on following pages.
 See Supplement section to find CSA rating details.
 Add "/C" to end of part number to order CSA mark on switch.

A
Toggles

Rockers

Pushbuttons

Illuminated PB

Programmable

Keylocks

Rotaries

Slides

Tactiles

Tilt

Touch

Indicators

Accessories

Supplement

Toggles
A

Rockers

Pushbuttons

Programmable Illuminated PB

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Tilt




Touch


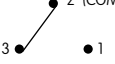
Indicators

Accessories

Supplement

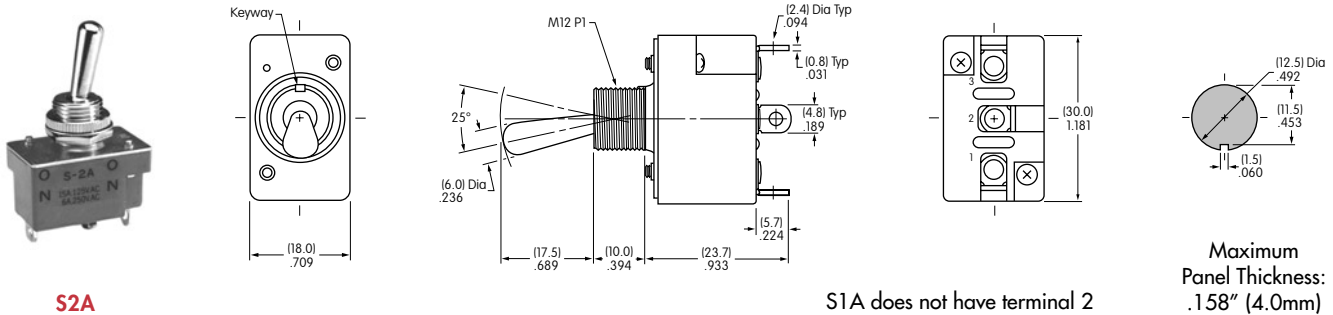
SINGLE POLE WITH SOLDER LUG *

Model	* Approvals			Pole & Throw	Toggle Position/Connected Terminals				Electrical Capacity				Angle of Throw
	UL	cULus	SP		Down 	Center 	Up 	Resistive			Inductive		
								AC 125V	AC 250V	DC 30V	AC 125V PF 0.6		
S1A	✓	✓	✓	SPST	ON 1-3	NONE	OFF —	15A	6A	20A	8A	25°	
S2A	✓	✓	✓	SPDT	ON 2-3	NONE	ON 2-1	15A	6A	20A	8A	25°	
S3A	✓	✓	✓	SPDT	ON 2-3	OFF	ON 2-1	15A	6A	20A	8A	25°	




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


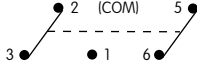
Notes: Standard Hardware: AT504M Knurled Nut, AT508 Lockwasher, AT527M Backup Hex Nut. See Accessories & Hardware section.
 Optional Splashproof Boot Assemblies: AT401 & AT4181 boots plus hex nut & o-ring. See Accessories & Hardware section.

- * See General Specifications page for approval marking.
- * Wire harness & cable assemblies offered only in Americas.



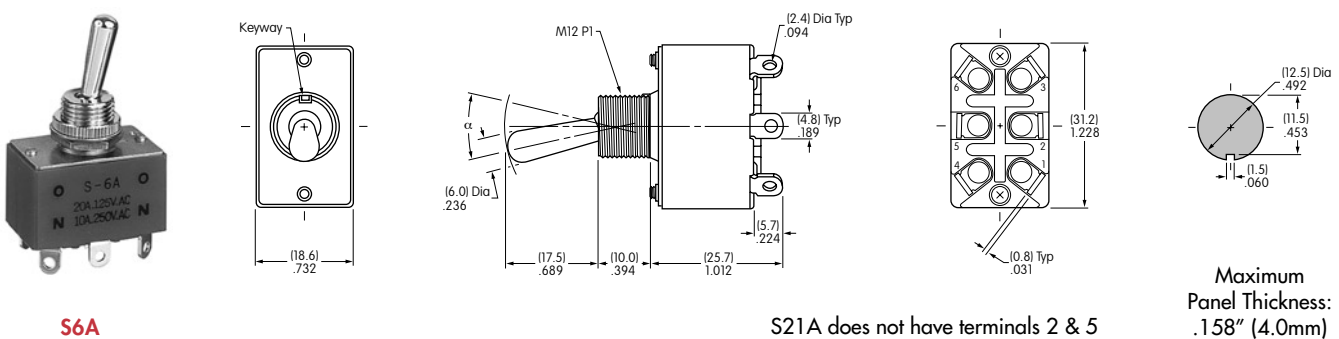
DOUBLE POLE WITH SOLDER LUG *

Model	* Approvals			Pole & Throw	Toggle Position/Connected Terminals				Electrical Capacity				α = Angle of Throw
	UL	cULus	SP		Down 	Center 	Up 	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  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.



- * See General Specifications page for approval marking.
- * Wire harness & cables assemblies offered only in Americas.



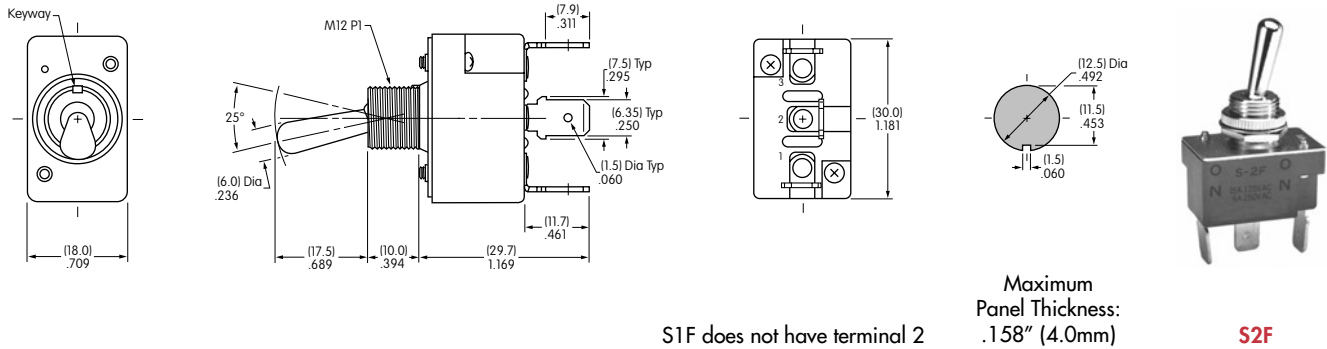
Medium Capacity Standard Size Toggles

SINGLE POLE WITH QUICK CONNECT




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


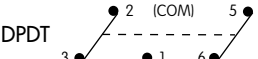
Throw & Schematics: SPST  INTERNAL CONNECTION  Note: Terminal numbers are actually on the switch

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

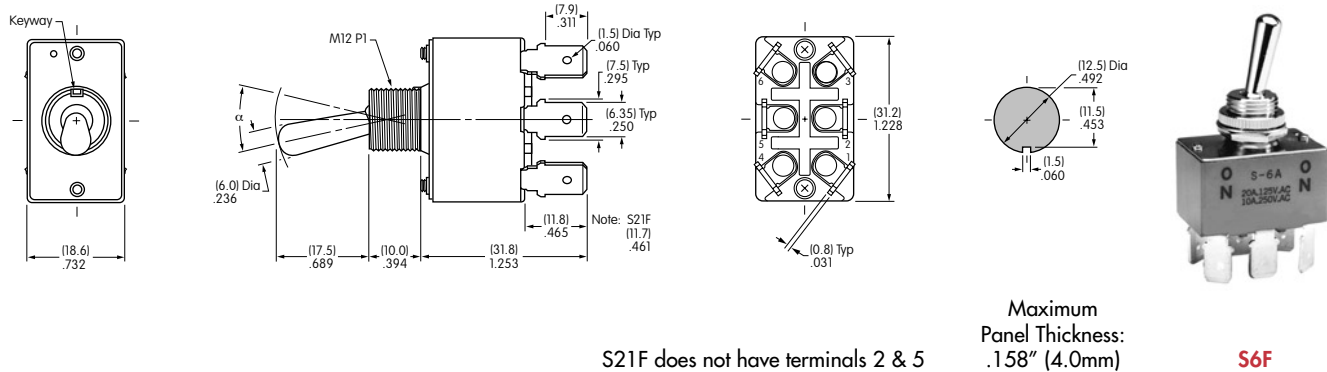


DOUBLE POLE WITH QUICK CONNECT

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


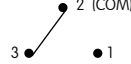
Throw & Schematics: DPST  INTERNAL CONNECTION  Note: Terminal numbers are actually on the switch

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



SINGLE POLE SOLDER LUG WITH PANEL SEAL *

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

Throw & Schematics: SPST  INTERNAL CONNECTION 

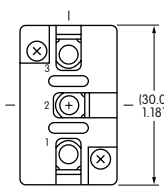
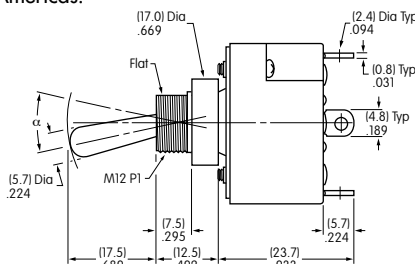
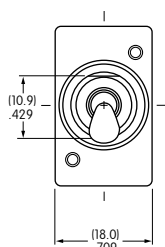
Note: Terminal numbers are actually on the switch

Notes: Standard Hardware: AT503M Face Hex Nut, 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.

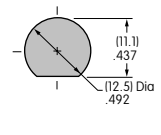
* Wire harness & cable assemblies offered only in Americas.



S2AW



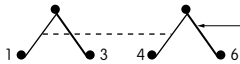
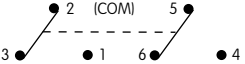
S1AW does not have terminal 2



Maximum Panel Thickness: .158" (4.0mm)

DOUBLE POLE SOLDER LUG WITH PANEL SEAL *

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

Throw & Schematics: DPST  INTERNAL CONNECTION 

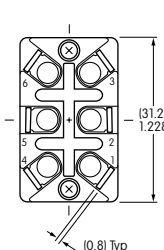
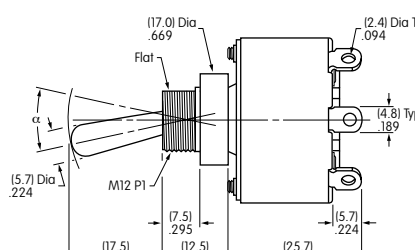
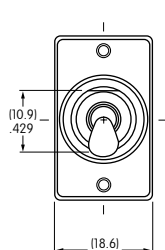
Note: Terminal numbers are actually on the switch

Notes: Standard Hardware: AT503M Face Hex Nut, 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.

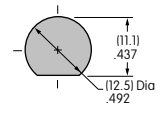
* Wire harness & cable assemblies offered only in Americas.



S6AW






S21AW does not have terminals 2 & 5



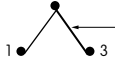
Maximum Panel Thickness: .158" (4.0mm)


Toggles A
 Rockers
 Pushbuttons
 Illuminated PB
 Programmable
 Keylocks
 Rotaries
 Slides
 Tactiles
 Tilt
 Touch
 Indicators
 Accessories
 Supplement

SINGLE POLE SOLDER LUG WITH LOCKING LEVER & PANEL SEAL *

Model	Approvals		Pole & Throw	Toggle Position/Connected Terminals				Electrical Capacity				α = Angle of Throw
	UL	cULus		Down 	Center 	Up 	Resistive			Inductive		
							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:

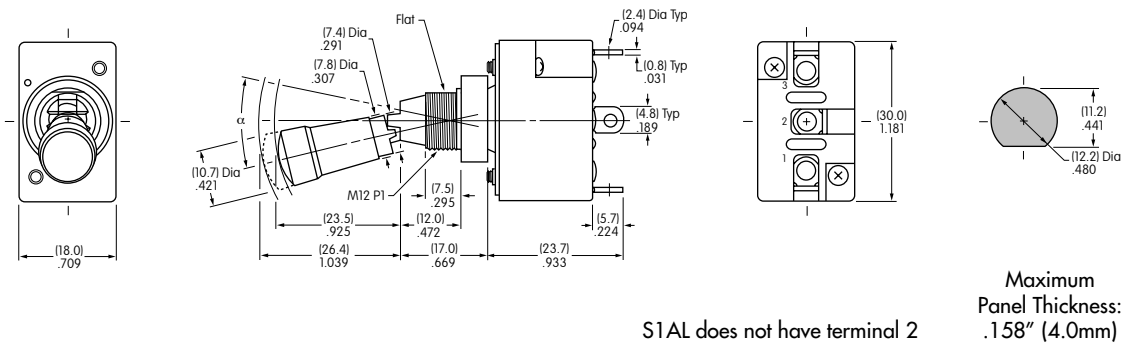
SPST:  INTERNAL CONNECTION

SPDT:  2 (COM)




Note: Terminal numbers are actually on the switch

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

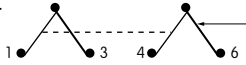
* Wire harness & cable assemblies offered only in Americas.

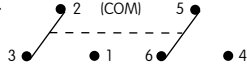


DOUBLE POLE SOLDER LUG WITH LOCKING LEVER & PANEL SEAL *

Model	* Approvals		Pole & Throw	Toggle Position/Connected Terminals				Electrical Capacity				α = Angle of Throw
	UL	cULus		Down 	Center 	Up 	Resistive			Inductive		
							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:

DPST:  INTERNAL CONNECTION

DPDT:  2 (COM) 5

Note: Terminal numbers are actually on the switch

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

* See General Specifications page for approval marking.

* Wire harness & cable assemblies offered only in Americas.

