

Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

[NKK Switches](#)
[WT11S](#)

For any questions, you can email us directly:

sales@integrated-circuit.com

Series WT

Environmentally Sealed Toggles

Toggles

Rockers

Pushbuttons

Illuminated PB

Programmable

Keylocks

Rotaries

Slides

Tactiles

Tilt

Touch

Indicators

Accessories

Supplement

A General Specifications

Electrical Capacity (Resistive Load)

Power Level: 10A @ 125V AC or 6A @ 250V AC or 10A @ 30V DC

Other Ratings

Contact Resistance: 10 milliohms maximum for solder lug & screw terminal models;
30 milliohms maximum for wire lead terminal models
Insulation Resistance: 200 megohms minimum @ 500V DC
Dielectric Strength: 1,500V AC minimum for 1 minute minimum
Mechanical Life: 50,000 operations minimum for On-None-Off, On-None-On, & On-Off-On models
30,000 operations minimum for all other models
Electrical Life: 15,000 operations minimum
Angle of Throw: 24°

Materials & Finishes

Toggle: Brass with chrome plating
Bushing & Outer Case: Fiberglass reinforced polyamide (UL94V-0)
Inner Case: Melamine
Inner Sealing Ring: Nitrile butadiene rubber for On-None-Off, On-None-On, & On-Off-On models;
silicone rubber for all other models
Outer Sealing Ring: Natural rubber
Movable Contactor: Copper with silver plating
Movable Contacts: Silver alloy plus copper with silver plating
Stationary Contacts: Silver alloy plus copper with silver plating
Terminals: Copper with tin plating for solder lug & wire lead; brass with silver plating for screw lug
Wire Lead Covers: Heat resistant polyvinyl chloride (Leads are AWG 16)

Environmental Data

Operating Temp Range: -30°C through +70°C (-22°F through +158°F)
Humidity: 90 ~ 95% humidity for 96 hours @ 40°C (104°F)
Vibration: 10 ~ 55Hz with peak-to-peak amplitude of 1.5mm traversing the frequency range
& returning in 1 minute; 3 right angled directions for 2 hours
Shock: 50G (490m/s²) acceleration (tested in 6 right angled directions, with 5 shocks in each direction)
Front Panel Seal: IP67 of IEC60529, dust tight & water protected during temporary immersion for all models;
optional toggle boot AT401 for additional protection (details at end of WT section)
Behind Panel Seal: IP60 of IEC60529, dust tight but not water protected
for solder lug & screw terminal models
IP67 of IEC60529, dust tight & water protected during temporary immersion
for wire lead models

Installation

Soldering Time & Temp: Manual Soldering: See Profile A in Supplement section.
Mounting Torque: 1.47Nm (13 lb•in)

Standards & Certifications

Flammability Standards: UL94V-0 outer case
Wiring Material Standards: UL AWM 1015 Recognized at Flammability VW-1;
Temperature Range -20°C ~ +105°C; Maximum Load 600V; AWG 16.
CSA TEW 105 Certified at Temperature Range -20°C ~ +105°C;
Maximum Load 600V

Environmentally Sealed Toggles

Series WT

Distinctive Characteristics

Sealing for wire lead models meets IP67 of IEC60529 Standards at front and back panel.

Sealing for solder lug or screw lug models meets IP67 at front panel and IP60 at back panel.

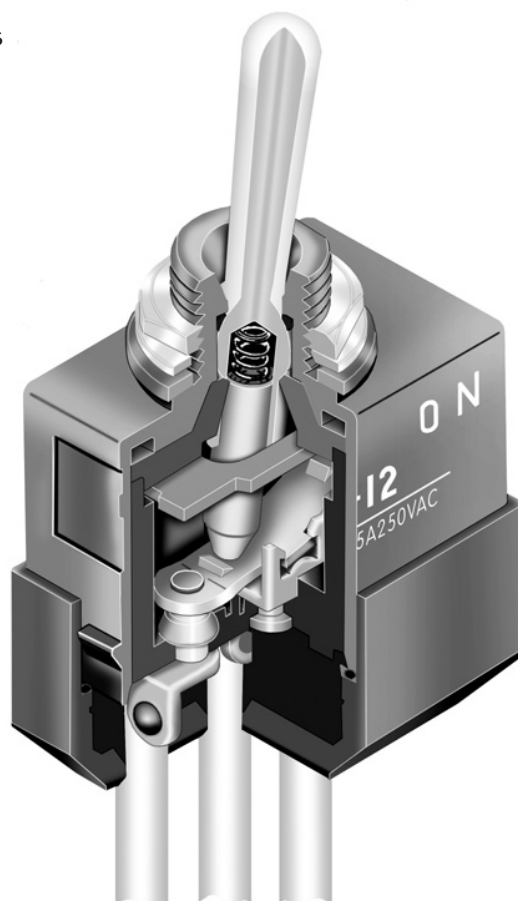
Single unit construction of bushing and case gives added protection from environmental elements.

Epoxy sealed base covered by outer case doubles protection from dust and water (not operable under water or oil).

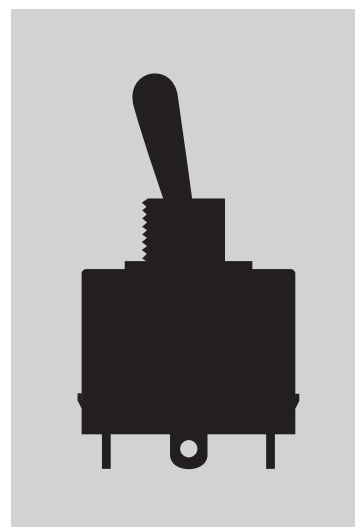
Specially designed contact mechanism that breaks light contact welds for circuits 11, 12, 21 and 22.

Interlocked movable contact mechanism provides highly reliable switching by minimizing contact bounce over center contact.

Heat resistant resin used for outer housing meets UL94V-0 flammability standard and provides high arc and tracking resistance.



Actual Size



A
Toggles

Rockers

Pushbuttons

Illuminated PB

Programmable

Keylocks

Rotaries

Slides

Tactiles

Tilt

Touch

Indicators

Accessories

Supplement

Series WT

Environmentally Sealed Toggles

TYPICAL SWITCH ORDERING EXAMPLE

WT

2

2

S

Poles

| | |
|---|--------------|
| 1 | SPST SPDT |
| 2 | DPST DPDT |

Circuits

| | | | |
|---|------|------|------|
| 1 | ON | NONE | OFF |
| 2 | ON | NONE | ON |
| 3 | ON | OFF | ON |
| 5 | ON | NONE | (ON) |
| 8 | (ON) | OFF | (ON) |
| 9 | ON | OFF | (ON) |

() = Momentary

Terminals

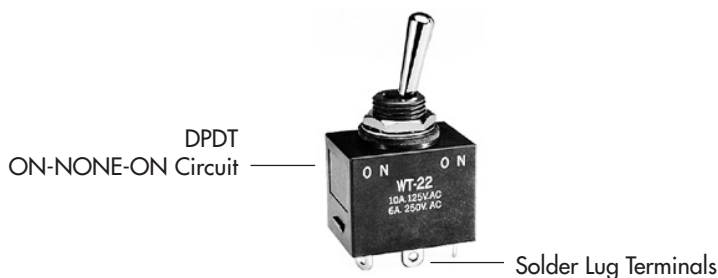
| | |
|---|-------------|
| S | Solder Lug* |
| T | Screw Lug |
| L | Wire Lead |

* Wire harness & cable a offered only in America

* Wire harness & cable assemblies offered only in Americas

DESCRIPTION FOR TYPICAL ORDERING EXAMPLE

WT22S



POLES & CIRCUITS

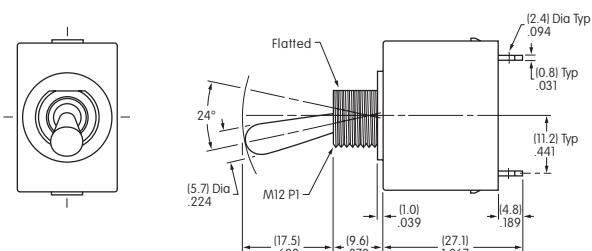
| | | Toggle Position () = Momentary | | | Connected Terminals | | | Throw & Schematics |
|------|--------------------------------------|------------------------------------|-----------------------------------|----------------------------------|---------------------|------------|--------------|--|
| Pole | Model | Down | Center | Up | Down | Center | Up | Note: Terminal numbers are not actually on wire lead models. |
| SP | WT11 | ON | NONE | OFF | 1a-1b | OPEN | OPEN | SPST |
| SP | WT12 WT13 WT15 WT18 WT19 | ON ON ON (ON) ON | NONE OFF NONE OFF OFF | ON ON (ON) (ON) (ON) | 1-1b | OPEN | 1-1a | SPDT |
| DP | WT21 | ON | NONE | OFF | 1a-1b 2a-2b | OPEN | OPEN | DPST |
| DP | WT22 WT23 WT25 WT28 WT29 | ON ON ON (ON) ON | NONE OFF NONE OFF OFF | ON ON (ON) (ON) (ON) | 1-1b 2-2b | OPEN | 1-1a 2-2a | DPDT |

Environmentally Sealed Toggles

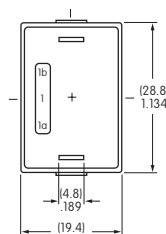
Series WT

TYPICAL SWITCH DIMENSIONS

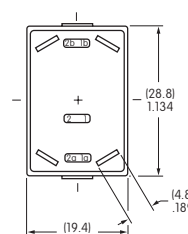
Single Throw • Solder Lug



Single Pole

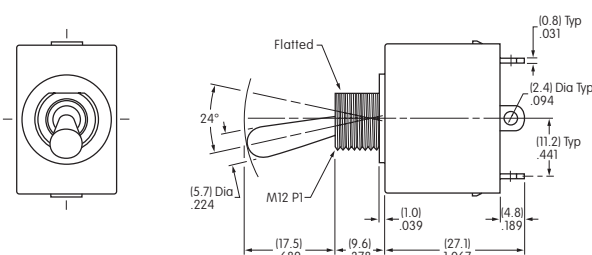


Double Pole

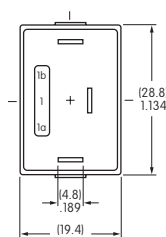


WT11S

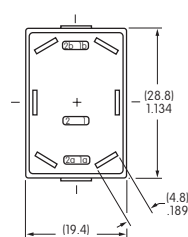
Double Throw • Solder Lug



Single Pole

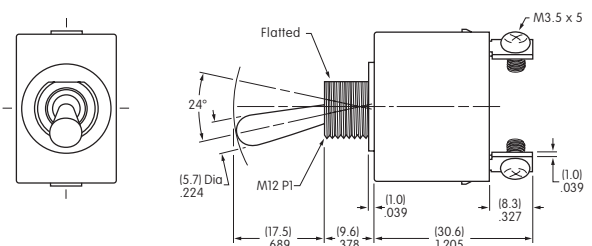


Double Pole

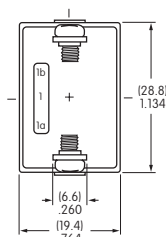


WT22S

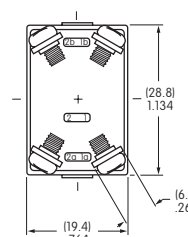
Single Throw • Screw Lug



Single Pole



Double Pole



WT21S

Series WT

Environmentally Sealed Toggles

Toggles

Rockers

Pushbuttons

Illuminated PB

Programmable

Keylocks

Rotaries

Slides

Tactiles

Tilt

Touch

Indicators

Accessories

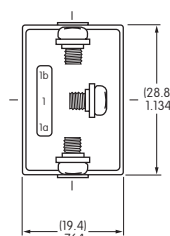
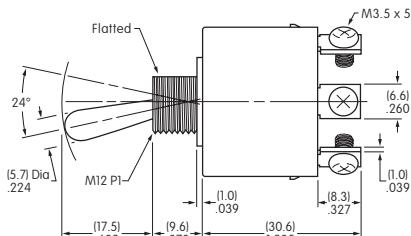
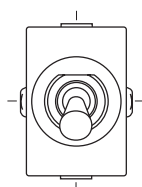
Supplement

TYPICAL SWITCH DIMENSIONS

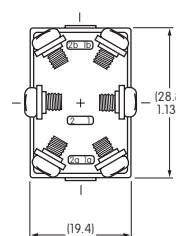
Double Throw • Screw Lug



WT22T



Single Pole

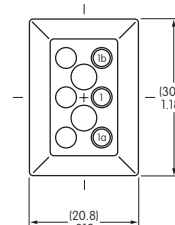
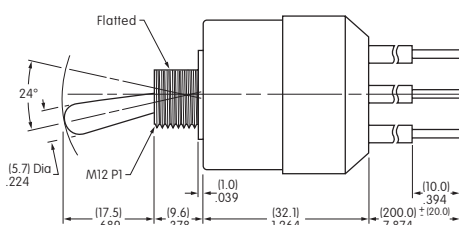
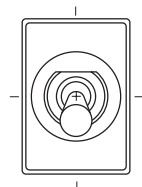


Double Pole

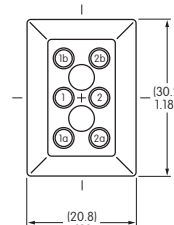
Single & Double Pole • Wire Lead



WT22L



Single Pole



Double Pole

STANDARD WIRE COLOR SCHEME

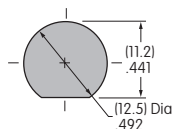
Wire leads are covered with heat resistant vinyl in accordance to UL 1015 and CSA TEW 105 Standards for Appliance Wiring Material (AWM).

| | Terminal Numbers & Wire Colors | | | | | |
|---------|--------------------------------|-------|-------|--------|------|--------|
| | 1a | 1 | 1b | 2a | 2 | 2b |
| WT11 | Black | | White | | | |
| WT12-19 | White | Black | Red | | | |
| WT21 | Black | | White | Blue | | Yellow |
| WT22-29 | White | Black | Red | Yellow | Blue | Green |

Environmentally Sealed Toggles

Series WT

PANEL CUTOUT & THICKNESS



Maximum Effective Panel Thickness

With Standard Hardware: .157" (4.0mm)

With optional Boot Assembly AT401A/H/S: .063" (1.6mm)

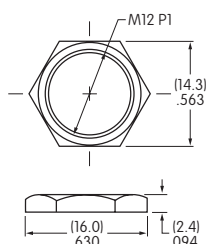
With optional Boot Assembly AT4181: .083" (2.1mm)

STANDARD HARDWARE

AT503M Hex Face Nut

Material: Brass with Chrome Plating

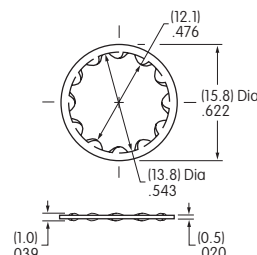
1 supplied with each switch



AT508 Internal Tooth Lockwasher

Material: Steel with Zinc/Chromate

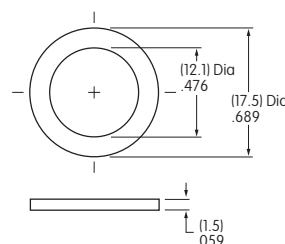
1 supplied with each switch



AT401P O-ring

Material: Nitrile butadiene rubber

1 supplied with each switch



OPTIONAL ACCESSORIES

Boot Assemblies for High Particulate Contamination Applications

AT401A for Oil Resistance

Boot Material:

Black nitrile butadiene rubber

Hex Nut Material & Finish:

Nickel plated brass

O-ring Material: Nitrile butadiene rubber

AT401H for Dust & Ozone Resistance

Boot Material:

Gray ethylene propylene rubber

Hex Nut Material & Finish:

Nickel plated brass

O-ring Material: Nitrile butadiene rubber

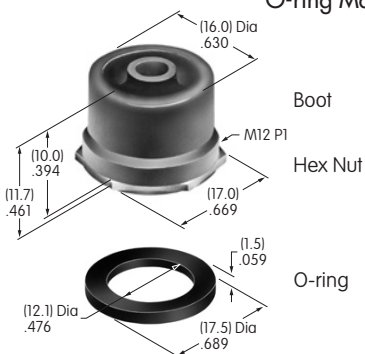
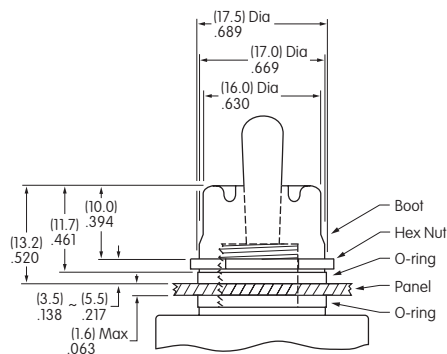
AT401S for Retention of Flexibility, Resilience & Tensile Strength Over Wide Temperature Range

Boot Material: Black silicone rubber

Hex Nut Material & Finish:

Nickel plated brass

O-ring Material: Nitrile butadiene rubber



AT4181 Splashproof Boot Assembly **NEW**

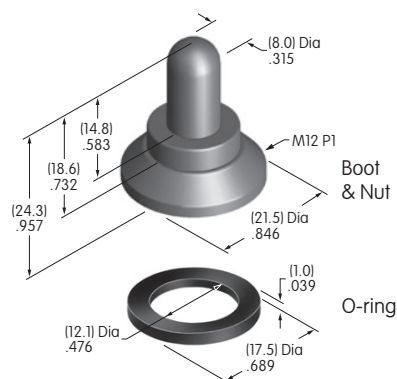
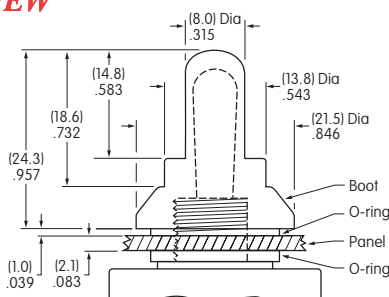
Boot Material:

Black Silicon rubber

Nut Material & Finish:

Nickel plated brass

O-ring Material: Nitrile butadiene rubber



Note: When using boot assemblies

AT401A/H/S or AT4181, also use o-ring AT401P from the standard hardware supplied.

Hex face nut AT503M and lockwasher AT508 are not used with these boot assemblies.

Notes
