**ELECTRIC & PNEUMATIC SWITCHES**

**Features**
- Switch modules available normally open or normally closed
- Wide range of mounting configurations available
- Actuators with or without an air pressure indicator
- Standard manual override or Pneumatic Actuation Only (Manual Override Blocked)
- Interfaces pneumatic signals with manual signals via the same devices, saving space and cost, adding safety and convenience
- 4 bright colors for visibility and operator recognition
- Can actuate as many as 12 switches

**Medium:** Air

**Operating Pressure:** Approx. 10 psig plus 1.5 psig per switch

**Max. Operating Pressure:** 150 psig

**Construction:**
- Activator Housing - Nickel-plated brass, Anodized aluminum, Nylon
- Internal Parts - Delrin *
- Seals - Buna-N rubber
- Mounting - M22 x 1.5 male thread for panel mount through 7/8" dia. hole

**Part No.**

<table>
<thead>
<tr>
<th>Push Buttons</th>
<th>Push Button Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS-BN</td>
<td>Manual Override . . . . Black</td>
</tr>
<tr>
<td>AS-GN</td>
<td>Manual Override . . . . Green</td>
</tr>
<tr>
<td>AS-BN</td>
<td>Manual Override . . . . Red</td>
</tr>
<tr>
<td>AS-YN</td>
<td>Manual Override . . . . Yellow</td>
</tr>
<tr>
<td>AS-BN-A</td>
<td>Air Actuation Only . . . . Black</td>
</tr>
<tr>
<td>AS-GN-A</td>
<td>Air Actuation Only . . . . Green</td>
</tr>
<tr>
<td>AS-RN-A</td>
<td>Air Actuation Only . . . . Red</td>
</tr>
<tr>
<td>AS-YN-A</td>
<td>Air Actuation Only . . . . Yellow</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Push Buttons with Indicator</th>
<th>Indicator Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS-BG</td>
<td>Manual Override . . . . Black</td>
</tr>
<tr>
<td>AS-BR</td>
<td>Manual Override . . . . Green</td>
</tr>
<tr>
<td>AS-BY</td>
<td>Manual Override . . . . Red</td>
</tr>
<tr>
<td>AS-BW</td>
<td>Manual Override . . . . Yellow</td>
</tr>
<tr>
<td>AS-BG-A</td>
<td>Air Actuation Only . . . . Green</td>
</tr>
<tr>
<td>AS-BR-A</td>
<td>Air Actuation Only . . . . Red</td>
</tr>
<tr>
<td>AS-BY-A</td>
<td>Air Actuation Only . . . . Yellow</td>
</tr>
<tr>
<td>AS-BW-A</td>
<td>Air Actuation Only . . . . White</td>
</tr>
</tbody>
</table>

**Single Pole Electrical Switch**

- Stem Travel: 1/8"
- Rating A.C.: 120 volts - 15 amperes
  - 240 volts - 15 amperes
  - 480 volts - 15 amperes
- Rating D.C.: 125 volts - 0.5 amperes
  - 250 volts - 0.25 amperes
- Mounting: 15/32-32 thread; nut and lockwashers furnished, also two 0.140" dia. mounting holes in body
- Approvals: UL and CE

**Part No.**

<table>
<thead>
<tr>
<th>Description</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Pole, Double Throw Snap-Action Electrical Switch</td>
<td>ES-1</td>
</tr>
<tr>
<td>Single Pole, Double Throw Snap-Action Electrical Switch with Gold-Plated Contact</td>
<td>ES-1-GP</td>
</tr>
<tr>
<td>Terminal Cover</td>
<td>15601</td>
</tr>
</tbody>
</table>

**Pneumatic Electric Switches**

**Part No.**

<table>
<thead>
<tr>
<th>Description</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumatic Electric Switch, Normally-Open Contacts</td>
<td>5100-3-NO</td>
</tr>
<tr>
<td>Pneumatic Electric Switch, Normally-Closed Contacts</td>
<td>5100-3-NC</td>
</tr>
</tbody>
</table>

**Electrical Rating:** 60 ma. AC resistive 40 ma. DC resistive @ 120 volts

**Switching Speed:** 125 Hz, normally open

**Actuating Pressure:** 3" H2O 10% pressure vacuum, or DP

**Maximum Pressure:** 8 psig (continuous)

**Construction:** ABS plastic case gold plated contacts natural rubber diaphragm

**Use:** for interfacing fluidic or other low pressure air signals with electronic circuitry dual inputs operates on pressure, vacuum, or differential pressure signals
Air-2-Electric® Air Switches and Mounting Clips

The Air-2-Electric system can handle multiple switches; using line voltage, as many as 12 switches can be actuated. Switch modules are available in normally open or normally closed models. Air-2-Electric actuators are available with a number of feature options such as a manual override and an air pressure indicator and in a variety of colors.

Air Switches
- **AS-01** - Normally Closed
- **AS-10** - Normally Open

Mounting Clips
The single clip mounts one switch to the pneumatic actuator. The front clip mounts up to three switches. Add side clips to mount up to five switches. For six to twelve switches, add a 2nd row clip to the front clip.

Note: The 2nd row clip will not mount where side clips are attached.

### Air Switches

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Operating Voltage (VAC)</th>
<th>Operating Current (A)</th>
<th>Number of Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS-01</td>
<td>Normally Closed</td>
<td>110, 220, 440</td>
<td>8, 6.5, 3.5</td>
<td>1 x 10^6</td>
</tr>
<tr>
<td>AS-10</td>
<td>Normally Open</td>
<td>110, 220</td>
<td>1.0</td>
<td>3 x 10^6</td>
</tr>
</tbody>
</table>

### Mechanical Life

- **220 V (50-60 Hz)**
  - Operating Current (A): 6, 2
  - No. of Operations: 1 x 10^6, 3 x 10^6
  - Mechanical Life: 3 x 10^6 cycles

### Electrical and Mechanical Characteristics

<table>
<thead>
<tr>
<th>Switch Modules AS-01 and AS-10</th>
<th>Electrical Performance</th>
<th>Voltage</th>
<th>Motor Horsepower</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>nominal Operating Voltage (VAC) (50-60 Hz)</td>
<td>110, 220, 440</td>
<td>110, 220</td>
</tr>
<tr>
<td></td>
<td>nominal Operating Current (A)</td>
<td>8, 6.5, 3.5</td>
<td></td>
</tr>
<tr>
<td>DC</td>
<td>nominal Operating Voltage (VDC)</td>
<td>12, 24</td>
<td>220/240, 440/480</td>
</tr>
<tr>
<td></td>
<td>nominal Operating Current (A)</td>
<td>4, 1.5</td>
<td></td>
</tr>
</tbody>
</table>

### Approvals

- **UL**, **BV**, **CS**, **EX**, **D**, **N**, **S**
- Screw terminals suitable for field wiring #14-12 AWG

**WARNING**: Caution should be taken to assure the conformation of all applicable standard codes and installation procedures. Proper design engineering procedures should be used to guard against the accidental actuation of the switches. Manual overrides or other precautionary measures should be considered.
PRESSURE ACTUATED SWITCHES

Medium: Air
Inlet Pressure: 5 - 150 psig; 0.3 - 10.3 bar
Pilot Port: #10-32, 1/8" NPT, M5
Mounting: External thread and nut for panel, bracket, or bulkhead mounting.
5/8 - 32 pressure actuated
15/32-32 manually operated
Accuracy: Actuation and deactuation pressures listed are nominal values. Each has a tolerance of ±12% or 1 psig whichever is greater

Switch Current Rating:
SAS
A 5A @ 125/250 VAC
3A @ 30 VDC/.1A 60 VDC
X no switch
MAS
B 3A @ 125/250 VAC
3A @ 30 VDC
C 10A @ 125/250 VAC
5A @ 50 VDC
X no switch

Design Series

Actuation Pressure*
06 6 psig/0.4 bar
20 20 psig/1.4 bar
40 41 psig/2.8 bar
65 65 psig/4.5 bar
MN Manual

Deactuation Pressure*
06 5 psig/0.3 bar
20 18 psig/1.2 bar
40 36 psig/2.5 bar
65 58 psig/4.0 bar
MN Manual

Inlet Port:
Blank #10-32 thd
F 1/8" NPT female
P 1/8" NPT male
M5 M5 x 0.8 thd

*Nominal value ± 12% or 1psig, whichever is greater when used with Clippard switches

SAS Model

MAS Model

150
Clippard Instrument Laboratory, Inc. 877-245-6247 www.clippard.com