The Type EVB can be used for any conventional air break switch application, such as main line disconnecting, sectionalizing or by-passing circuits in substations, transmission switching stations or transmission lines.

With current-carrying parts constructed of corrosion-resistant copper and bronze, these switches are especially suited for use in coastal areas and other environments where aluminum might be unsatisfactory.

FEATURES

- The switch blade is securely toggle-locked closed. High winds or structure vibration cannot force the blade out of contact.
- Opening and closing in ice is enhanced by enclosed hinge contacts, blade rotation, mechanical advantages in the operating linkages, generous contact deflection, and the design of critical areas so ice is in shear, where it is weakest.
- Arcing horns are standard equipment on all upright mounted switches.
- Jack screws - which eliminate most of the hassle of installation - are standard equipment on all switches of 69 kV and above. Below 69 kV, all switches are shipped fully assembled and adjusted.
- These switches have no critical adjustments to be made in the field. Live parts on ratings 69 kV and above are fully assembled, adjusted, and shipped bolted to their own switch base. Installation adjustment is largely a matter of leveling the insulators - using the jack screws.
- Operating mechanisms are conventional, easily-installed pipe-and-adjustable arm designs. All mounting brackets, steel angles, plates, etc. are supplied by Southern States, when specified.
- To further reduce installation time, we can also supply all operating pipes cut-to-length. This unique Southern States practice eliminates time-wasting field measuring, cutting and errors.

Each switch pole has adjustable stops on the current-carrying parts for both the open and the closed position. This feature allows “fine tuning” of the blade rotation and degree of opening of each pole.

Each switch pole has adjustable stops for both the open and the closed position on the rotating insulator bearing to provide positive limits to the travel of the operating mechanism. This feature makes installation easier, protects the equipment, and provides for more positive operation of the three-phase switch.

Drawings of the operating mechanism are customized - specific for each job site, by easy-to-read CAD. This eliminates guesswork in the field, minimizes errors, saves time.
Do not use these dimensions for construction purposes; refer to the factory for certified prints.

*Refer to factory for 230 kV.
**Horizontal upright mounting.
***Vertical and underhung mounting.
††On ratings 69 kV and below, bearing extends 2-9/16" below bottom of base.

These are recommended insulators. Others are available upon request.

<table>
<thead>
<tr>
<th>VOLTAGE</th>
<th>BIL. KV</th>
<th>CURRENT</th>
<th>AMPERES</th>
<th>CONT.</th>
<th>MOM.</th>
<th>INSULATORS</th>
<th>T.R. NO.</th>
<th>T.P. NO.</th>
<th>CATALOG NO.</th>
<th>WEIGHT IN KILOGRAMS</th>
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<td>NOM.</td>
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<td>TR-202</td>
<td>EV9751200</td>
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<td>600</td>
<td>4000</td>
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CONSTRUCTION

1. Hinge yoke, jaw and blade tip - solid, cast bronze.
2. Live part mechanical components - solid, cast bronze, precision machined at moving part interfaces. All rotating parts turn on low friction, high molecular weight polyethylene bushings.
4. Counterbalancing - (69 kV, 1200 Amp. and above) Maintenance-free coil spring, enclosed housing.
5. Insulator bearing - Low friction, double row ball bearings. Maintenance-free. For specific construction details, refer to the factory.
6. Switch bases - Heavily galvanized steel. Single channel 7.2 through 69 kV; webbed double channel 115 kV and above.
7. Terminal Pads - are machined bronze. Can be tinned for use with either copper or aluminum conductors, if specified.
8. Insulators - As specified by the customer.

CONTACT CONSTRUCTION

The contacts on all ratings are silver-to-silver for maximum, long-term reliability; pressure-multiplying reverse-loop (Amplitacts®) for the utmost short circuit security.

The stationary contact fingers are wrought copper bars with 10 mil thick coin silver strips brazed to the area of moving contact interface. Stainless steel coil springs supply backup pressure.

The moving contacts are 43 mil thick, one-half round silver strips brazed to the blade tip and blade socket. It is important to note that brazing - versus other methods of silver attachment - ensures damage-free contacts during high fault currents.

The alloys used in these contacts are highly resistant to galling and wear, and provide cool-running, extremely durable current interchange.

OPERATION

The blade of the EVB rotates into the stationary contacts, wiping the contacts clean with each opening and closing of the switch, and establishing high contact pressure. The contacts on the hinge end of the switch are constantly engaged and are not a part of the hinge bearings, which greatly increases the long-term reliability and trouble-free performance of these switches.
Type EVB

TESTING

The EVB has been tested both electrically and mechanically to industry specifications. The photograph above shows an EVB 161 kV, 1200 amp., motor operated, three-phase switch. It was tested for 1000 openings and closings, with no interim adjustments. There was no damage incurred to the contacts, moving parts or operating components.

The EVB switches have the most trouble-free contacts ever designed. A product of the company’s research and testing, the Amplitacts® used on these switches are high pressure, silver-to-silver contacts that use the magnetic fields generated by fault currents to increase the contact pressure as the current increases.

The drawings above diagram the principle of the Amplitact®. The contact geometry carries the current flow first up, then down the contact fingers, which places opposing magnetic fields in close proximity to each other. These fields increase with the square of the current, clamping the blade tip ever tighter when high pressures are needed the most - during fault currents.