TYPE PAV PAD-MOUNTED AIR-INSULATED VACUUM SWITCHGEAR WITH VISIBLE ISOLATION VACUUM SWITCHES AND FAULT INTERRUPTERS – KEY FEATURES

Featuring:

- **Footprint** - Same as conventional 15kV dead-front pad-mounted switchgear.
- **33” Bushing Height** - Same as conventional dead-front pad-mounted switchgear.
- **Cable Configuration** - Same as conventional pad-mounted switchgear.
- **630A Three-Phase Vacuum Switches** - with visible isolation blades, tested to C37.74.
- **Vacuum Fault Interrupters** - Eliminate fuses on the load taps up to 630A continuous, tested to C37.60.
- **No External Power or Battery Sources** are required to manually close (and trip open) switch or fault interrupter positions.
- **“Trip Free” Operation** - Allows the interrupter to trip open immediately if closed into a fault.
- **CT-Powered Relay Option** - Eliminates the need for a UPS or other battery back-up. Other relay and power options are available. Consult factory.
- **Fully Rated, Interlocked, Visible Isolation** - Isolation blades are interlocked with vacuum bottles to prevent load switching with the isolation blades, providing full voltage and BIL withstand gap when open, irrespective of vacuum bottle contact position.
- **Visible Isolation Blades** are lockable.
- **Base Adapters (Optionally Available)** - Provide an easy transition from existing live-front pad-mount installations to a vacuum solution.

Specifications must be verified by factory.

Every effort is made to ensure that customers receive up-to-date information on Federal Pacific products; however, from time to time, modifications to our products may without notice make the information contained herein subject to alteration.
15kV Pad-Mounted Air-Insulated
Vacuum Switchgear - Type PAV

General Design Ratings
Voltage (nominal) .............................................. 15kV
Voltage (maximum) ............................................ 15.5kV
Frequency ..................................................... 50 or 60 Hz
BIL ........................................................... 95kV
Bus Rating .................................................... 630 Amps
Bus Type .................................................... Aluminum (Copper Available)
Insulators ..................................................... Cycloaliphatic Epoxy

Vacuum Switch (FVS) per C37.74
Continuous ................................................... 630 Amps
Load Switching ............................................. 630 Amps
Short-Time Withstand (3 Seconds) ....................... 12.5kA Sym.
Peak Withstand ........................................... 32.5kA
Fault Close ................................................ 20kA RMS ASYM
Mechanical Operations (Close-Open) ................. 2,000

Vacuum Fault Interrupter (FVI) per 37.60
Interruping Amps, RMS Symmetrical .................. 12.5kA
Short Circuit Interrupting Amps, RMS Asymmetrical . 20kA
Peak Withstand Current, Amps ......................... 32.5kA
Fault Duty Operations (C37.60 Duty Cycle) ......... 116 Operations

Typical Design
Line-side · Manually operated (open and close) 3-phase 630A vacuum switches (Type FVS), with integral visible isolation blades, providing full 95kV BIL rated isolation.

Load-side · CT powered relayed (standard) and manually operated (open and close) 3-phase 630A vacuum fault interrupters (Type FVI), with integral visible isolation blades providing full 95kV BIL rated isolation.

Power Requirements · No external power or battery is required to open or trip the vacuum bottles. No external power or battery is required to respond to and clear a fault.

“Trip Free” Operation · Allows the interrupter to begin the trip-to-open sequence immediately if closed into a fault.

Load Tap Fuses Eliminated · Vacuum fault interrupters replace fuses on the load taps.

Three-Phase Load-Side Fault Interruption · Eliminates “single-phasing” of three-phase loads.

Vacuum Bottle Technology Provides Thousands of Operations · VFI tested to 2000 mechanical operations, per C37.60, but the vacuum bottle poles are rated for up to 30,000 mechanical operations.

Configurations · All standard 15kV 2-compartment and 4-compartment dead-front configurations are available.

Footprint · Matches conventional PSE dead-front switchgear. Base adapters are available for installation on existing live-front pads or foundations.

Approximate Dimensions:
Footprint ....................................................... 75” W x 69.75” D (15kV PAV-9 configuration)
Height ......................................................... 44” H (not including base spacer or adapter)
Bushing Height ............................................. 33” H (not including base spacer or adapter)
Operator Cabinet Overhang ....................... 17.75” (per cabinet)

Approximate Weight: 2400 pounds (15kV PAV-9 configuration as shown)
15kV CLASS PAD-MOUNTED VACUUM SWITCH WITH VISIBLE ISOLATION (FVS) AND VACUUM FAULT INTERRUPTER WITH VISIBLE ISOLATION (FVI) - RATINGS (Tested Per C37.60 and C37.74)

FVS Vacuum Switch or FVI Fault Interrupter - Ratings

- Maximum Voltage Rating: 15.5kV
- Impulse Rating (BIL): 95kV
- Frequency: 50/60 Hz
- Rated Continuous Amps: 630A
- Rated Short-Time Withstand (3 Seconds, Sym.): 12,500A
- Rated Peak Withstand: 32,500A
- Rated Cable Charging Interrupting Current: 10A
- Mechanical Operations (Close-Open): 2,000

FVS Vacuum Switch - Ratings (per C37.74)

- Rated Load Current Switching: 630A
- Rated (Fault) Making Current (Asym.): 20,000A

FVI Vacuum Fault Interrupter - Ratings (per C37.60)

- Amps, RMS Symmetrical: 12,500A
- Short Circuit Interrupting Amps, RMS, Asymmetrical: 20,000A
- Peak Withstand Current, Amps: 32,500A
- Rated Line Charging Interrupting Current: 2A
- Fault Duty Rating: 116 Operations

IEEE Std. C37.60-2012

<table>
<thead>
<tr>
<th>Test Duty Level</th>
<th>Percent of Operating</th>
<th>Test Value</th>
<th>Number of Unit Operations</th>
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<tr>
<td>T20</td>
<td>15% - 20%</td>
<td>2 kA</td>
<td>44</td>
</tr>
<tr>
<td>T50</td>
<td>45% - 55%</td>
<td>6 kA</td>
<td>56</td>
</tr>
<tr>
<td>T100</td>
<td>90% - 100%</td>
<td>12.5 kA</td>
<td>16</td>
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<tr>
<td><strong>Total Number of Operations</strong></td>
<td></td>
<td></td>
<td><strong>116</strong></td>
</tr>
</tbody>
</table>

Additional Electrical Ratings

Visible Isolation Disconnect - Impulse (BIL): 95kV

Notes:

a) Verified mechanical operations, per C37.60. Ultimate mechanical duty-cycle of vacuum bottles estimated to be in excess of 10,000 operations.

b) Based on the C37.60 duty-cycle series – T-100 operation (16 operations @ 90% - 100%)

c) Fault interruptions per duty-cycle, Table 12, C37.60 – 16 @ 90% - 100% (T-100), 56 @ 45% - 55% (T-50), and 44 @ 15% - 20% (T-20)