Figure 1

FP Dead-Front PSE Pad-Mounted Switchgear contains an integrated system of fuses and switches with access control features to minimize exposure to high voltage during switching and re-fusing operations.

FP Manual Dead-Front Type PSE Pad-Mounted Switchgear meets or exceeds all ratings in IEEE C37.73 and C37.74, and ANSI C37.72. The enclosure provides increased security of fuse and switch components from environmental concerns and enhanced isolation of medium-voltage circuits to limit exposure of operating personnel.

FP PSE pad-mounts feature a low-profile, heavy-gauge enclosure with cross-kinked roof to eliminate potential for standing water. Stainless-steel hinges and hinge pins combined with the padlockable, self-resetting, three-point, auto-latch door security system assures durability while controlling access to the interior.

Double-door construction allows clear access to elbow terminations. Ground rods that are full width of door opening make grounding of circuits and installation of surge arresters easy to achieve using shotgun clampstick. Enclosure bottom flange includes gasketing to isolate and protect the finish during installation and throughout the service life of the switchgear. Galvanized-steel floor plate on bottom of compartment containing medium-voltage components isolates interior from moisture and ingress of other contaminants.

The electrostatically deposited, baked-on powder epoxy finish exceeds ANSI requirements and provides a tough, durable high-gloss finish with protective qualities essential to insure long-term protection of the metal.
Structured text:

**Figure 2**
Enclosure integrity and security is assured with FP pad-mounted switchgear.

---

**Figure 3**
Switch termination compartments allow visual verification of switch blade position and clear access to elbow terminations in FP Dead-front PSE Pad-Mounted Switchgear.
Figure 4

Interior view of fuse-termination compartment of FP PSE Pad-Mounted Switchgear includes many features to assure ease of operation for operating personnel when switching, inspecting and re-fusing 200-ampere circuits.
15kV Basic Units-Three-Phase
14.4kV Nominal • 17kV Maximum Design • 95 kV BIL
Circuit Diagrams with Compartment Numbers

PSE Pad-mounted Switchgear is designed for use only by qualified personnel trained to operate medium-voltage switchgear. Users other than electric utilities are urged to use key interlocking devices as applicable. Should non-utility users elect not to use key interlocks, they must submit written certification that only qualified and trained personnel will operate the equipment, and that key interlock systems are not required.

Model PSE-4 is available only to electric utilities.

All units are 45" high without base spacers.

To determine complete catalog number for PSE models with fuse compartments substitute for "*" shown as last figure in catalog number listed below each diagram on this page the number shown in the following table:

<table>
<thead>
<tr>
<th>Compartment</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>S&amp;C Type SM-4</td>
</tr>
<tr>
<td>2</td>
<td>S&amp;C Type SMU-20</td>
</tr>
<tr>
<td>3</td>
<td>Cutler-Hammer Type DBU</td>
</tr>
<tr>
<td>4</td>
<td>Not applicable†</td>
</tr>
<tr>
<td>5</td>
<td>Cooper (M-E) Type NX</td>
</tr>
<tr>
<td>6</td>
<td>Cooper (Kearney) Type Q</td>
</tr>
<tr>
<td>7</td>
<td>Cooper (CT) X-Limiter</td>
</tr>
</tbody>
</table>

Catalog No. 42100
PSE-3
41" W x 69-3/4" D

Catalog No. 4201*
PSE-4
41" W x 52-3/4" D

Catalog No. 4211*
PSE-5
41" W x 69-3/4" D

Catalog No. 4321*
PSE-6
75" W x 69-3/4" D

Catalog No. 4312*
PSE-7
75" W x 69-3/4" D

Catalog No. 4412*
PSE-8
75" W x 69-3/4" D

Catalog No. 4422*
PSE-9
75" W x 69-3/4" D

Catalog No. 44400
PSE-10
75" W x 72-3/4" D

Catalog No. 4431*
PSE-11
75" W x 72-3/4" D

Catalog No. 4413*
PSE-12
75" W x 69-3/4" D

Catalog No. 44300
PSE-13
75" W x 72-3/4" D
Current Ratings - 15 kV Basic Units

Switch Only Units: PSE-3, -10, -13

| Auto-Jet® Switch Ratings Amperes RMS |  |
|---|---|---|---|
| Continuous | Loadbreak | Momentary ASYM | 3-Time Fault-Close ASYM* |
| 600 | 600 | 40,000 | 40,000 |

*Three-time fault-close rating: The Auto-jet® switch can be closed into a fault of the magnitude specified three times and remain operable and able to carry and interrupt the rated current.

Switch/Fuse Units: PSE-5, -6, -7, -8, -9, -11, -12, -14

<table>
<thead>
<tr>
<th>Fuse Manufacturer and Type</th>
<th>Unit Overall Ratings</th>
<th>Fuse Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amperes RMS Short Circuit</td>
<td>Amperes RMS</td>
</tr>
<tr>
<td></td>
<td>Momentary ASYM</td>
<td>MVA 3-Phase SYM at 14.4 kV</td>
</tr>
<tr>
<td>SM-4</td>
<td>20,000</td>
<td>310</td>
</tr>
<tr>
<td>S&amp;C SMU-20</td>
<td>22,400</td>
<td>350</td>
</tr>
<tr>
<td>Cutler-Hammer DBU</td>
<td>20,000</td>
<td>350</td>
</tr>
<tr>
<td>Cooper (M-E) Type NX</td>
<td>22,400</td>
<td>620</td>
</tr>
<tr>
<td>Cooper (Keamey) Type Q</td>
<td>22,400</td>
<td>620</td>
</tr>
<tr>
<td>Cooper (CT) X-Limiter</td>
<td>22,400</td>
<td>620</td>
</tr>
</tbody>
</table>

SM-4 fused units require three S&C Cat. No. 86632R2 SM-4Z fuse holders and three S&C SM-4 fuse refills per fuse compartment. †

SMU-20 fused units require three S&C Cat. No. 3097 SML-20 fuse end fittings and three S&C SMU-20 fuse units per fuse compartment. †

DBU fused units require three CH Cat. No. DBU-EFID end fittings and three Cutler-Hammer DBU fuse units per fuse compartment. †

NX fused units require three appropriately rated fuses per fuse compartment. †

X-Limiter fused units require three appropriately rated fuses per fuse compartment.

Ratings expressed in RMS amperes asymmetrical are 1.6 times the symmetrical values listed.

Unit overall ratings are limited to the lowest component rating.

SM-5 fuses cannot be used in PSE Pad-Mounted Switchgear. Contact the factory for SM-5 applications.

For fuse application and ordering information refer to the applicable fuse manufacturer literature.
25kV Basic Units—Three-Phase
25kV Nominal • 27kV Maximum Design • 125 kV BIL
Circuit Diagrams with Compartment Numbers

PSE Pad-mounted Switchgear is designed for use only by qualified personnel trained to operate medium-voltage switchgear. Users other than electric utilities are urged to use key interlocking devices as applicable. Should non-utility users elect not to use key interlocks, they must submit written certification that only qualified and trained personnel will operate the equipment, and that key interlock systems are not required.

Model PSE-4 is available only to electric utilities.
All units are 51" high without base spacers.

To determine complete catalog number for PSE models with fuse compartments substitute for "*" shown as last figure in catalog number listed below each diagram on this page the number shown in the following table:

<table>
<thead>
<tr>
<th>Compartment 1</th>
<th>Compartment 2</th>
<th>Compartment 3</th>
<th>Compartment 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSE-3</td>
<td>PSE-4</td>
<td>PSE-5</td>
<td>PSE-6</td>
</tr>
</tbody>
</table>

Catalog No. 52100
Catalog No. 5201*
Catalog No. 5211*
Catalog No. 5321*
Catalog No. 5312*
Catalog No. 5412*
Catalog No. 5422*
Catalog No. 54300

1 S&C Type SM-4
2 S&C Type SMU-20
2 Cutler-Hammer Type DBU
3 Not applicable
4 Cooper (M-E) Type NX
6 Cooper (Kearney) Type Q
7 Cooper (CT) X-Limiter

PSE-10
84" W x 88-1/4" D
Catalog No. 54400

PSE-11
84" W x 88-1/4" D
Catalog No. 5431*

PSE-12
84" W x 81-3/4" D
Catalog No. 5413*

PSE-13
84" W x 88-1/4" D
Catalog No. 54300
Current Ratings - 25kV Basic Units

Switch Only Units: PSE-3, -10, -13

<table>
<thead>
<tr>
<th></th>
<th>Auto-Jet® Switch Ratings Amperes RMS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Continuous Loadbreak Momentary ASYM 3-Time Fault-Close ASYM*</td>
</tr>
<tr>
<td></td>
<td>600</td>
</tr>
</tbody>
</table>

*Three-time fault-close rating: The Auto-jet® II switch can be closed into a fault of the magnitude specified three times and remain operable and able to carry and interrupt the rated current.

Switch/Fuse Units: PSE-5, -6, -7, -8, -9, -11, -12, -14

<table>
<thead>
<tr>
<th>Fuse Manufacturer and Type</th>
<th>Unit Overall Ratings ➂</th>
<th>Fuse Ratings ➁</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Momentary ASYM</td>
<td>MVA 3-Phase SYM at 25kV</td>
</tr>
<tr>
<td>S&amp;C SM-4†</td>
<td>20,000</td>
<td>540</td>
</tr>
<tr>
<td>S&amp;C SMU-20</td>
<td>20,000</td>
<td>540</td>
</tr>
<tr>
<td>Cutler-Hammer DBU</td>
<td>20,000</td>
<td>540</td>
</tr>
<tr>
<td>Cooper (M-E) Type NX</td>
<td>40,000</td>
<td>1,080</td>
</tr>
<tr>
<td>Cooper (CT) X-Limiter</td>
<td>40,000</td>
<td>1,080</td>
</tr>
</tbody>
</table>

†Applicable to solidly-grounded-neutral systems only with fuses connected by single-conductor, concentric-neutral type cable to a transformer or transformers. Rating is 9,400 amperes RMS symmetrical, 15,040 amperes RMS asymmetrical (405 MVA) for all other applications.

① SM-4 fused units require three S&C Cat. No. 86632R2 SM-4Z fuseholders and three S&C SM-4 fuse refills per fuse compartment. ††

SMU-20 fused units require three S&C Cat. No. 3097 SML-20 fuse end fittings and three S&C SMU-20 fuse units per fuse compartment. ††

DBU fused units require three CH Cat. No. DBU-EFID end fittings and three Cutler-Hammer DBU fuse units per fuse compartment. ††

NX fused units require three appropriately rated fuses per fuse compartment. ††

X-Limiter fused units require three appropriately rated fuses per fuse compartment.

② Ratings expressed in RMS amperes asymmetrical are 1.6 times the symmetrical values listed.

③ Unit overall ratings are limited to the lowest component rating.

④ SM-5 fuses cannot be used in PSE Pad-mounted Switchgear. Contact the factory for SM-5 applications.

†† For fuse application and ordering information, refer to the applicable fuse manufacturer literature.
Optional Features

**BASE SPACER — MILD STEEL**

*Non-compartmented (Applicable to all models)*

- A2: 6" to increase cable terminating height
- A3: 12" to increase cable terminating height
- A4: 18" to increase cable terminating height
- A5: 24" to increase cable terminating height

*Compartmented (Applicable to all models)*

- A6: 6" to increase cable terminating height
- A7: 12" to increase cable terminating height
- A8: 18" to increase cable terminating height
- A9: 24" to increase cable terminating height

**BASE SPACER — STAINLESS STEEL**

*Non-compartmented (Applicable to all models)*

- AS2: 6" to increase cable terminating height
- AS3: 12" to increase cable terminating height
- AS4: 18" to increase cable terminating height
- AS5: 24" to increase cable terminating height

*Compartmented (Applicable to all models)*

- AS6: 6" to increase cable terminating height
- AS7: 12" to increase cable terminating height
- AS8: 18" to increase cable terminating height
- AS9: 24" to increase cable terminating height

**BUS**

- C: Copper Bus (main and all termination points)

**FUSE STORAGE HOOKS**

Hooks to hang three spare fuseholders or fuse units with end fittings on fuse compartment door.

- E2: Compartment 4. Applicable to PSE-6, -11
- E4: Compartment 1. Applicable to PSE-5, -6, -7, -8, -9, -11
- E5: Compartment 2. Applicable to PSE-6, -7, -8, -9, -11, -12
- E6: Compartment 3. Applicable to PSE-6, -7, -8, -9, -11, -12

**FINISH COLOR & SPECIAL CABINET MATERIAL**

(Applicable to all models)

- F2: ANSI #61 light gray
- F3: ANSI #70 sky gray
- F4: Type 304 stainless-steel cabinet (exterior only)
- F5: Coal Tar coating on lower three inches of enclosure or optional base spacer
- F6: All Type 304 Stainless-Steel Cabinet and internal parts (or non-ferrous) hardware, except switch frame and all current-carrying parts.

**KEY INTERLOCKS AND SECURITY BOLTS**

Name of ultimate user, installation number and location of pad-mounted switchgear required with order.

- H: Hex-head security bolts in lieu of standard penta-head security bolts on all access doors. Applicable to all models.
- K1: Anti-parallel key interlocks to prevent paralleling switches in Compartments 1 & 2. Applicable to PSE-6, -9, -10, -11, -13.
- K2: Provisions to padlock switch in open or closed position. All models except PSE-4.
- K3: Key interlock to prevent opening fuse access door until all switches are locked open. Applicable to PSE-5, -6, -7, -8, -9, -11, -12.
- K4: Anti-paralleling and fuse access key interlock to prevent paralleling of switches in Compartments 1 & 2 and to prevent opening fuse access door until all switches are locked open. Applicable to PSE-6, -9, -10, -11, -13.

**FAULT INDICATOR PROVISIONS**

- T6: Mounting provisions only. To accommodate one three-phase fault indicator in each switch compartment. Applicable to all models except PSE-4.
- T7: Mounting provisions only with viewing window, to accommodate one three-phase fault indicator in each switch compartment with fault indicator viewing window on associated door. Applicable to all models except PSE-4.

---

Switch-Handle Lockbox

Switch-Operating Handle Storage

Switch-Handle Operation - handle unfolds and clip slides over joint to fix handle in extended position

Penta-head (or optional hex-head) actuated door lockbox features hinged padlockable cover to block access to bolt head. Rotate bolt in either direction for opening.
STANDARD SPECIFICATION FOR TYPE PSE
DEAD-FRONT PAD-MOUNTED SWITCHGEAR

A. General

1. Product

The pad-mounted gear shall be in accordance with the applicable plans, drawings and one-line diagrams and shall conform to these specifications.

2. Assembly

The outdoor pad-mounted gear shall consist of a single self-supporting enclosure, containing three-phase group-operated interrupter switches and three-phase sets of single-pole fuses with the necessary accessory components, all completely factory assembled and operationally checked.

3. Coordination

To ensure a completely coordinated design, the pad-mounted gear shall be integrally designed and produced by the manufacturer of the basic switching equipment.

4. Ratings

Ratings for the integrated pad-mounted assembly shall be as designated below

<table>
<thead>
<tr>
<th>System Voltage Class</th>
<th>15kV</th>
<th>25kV</th>
</tr>
</thead>
<tbody>
<tr>
<td>kV, Nominal</td>
<td>14.4</td>
<td>25</td>
</tr>
<tr>
<td>kV, Maximum Design</td>
<td>17</td>
<td>27</td>
</tr>
<tr>
<td>kV, BIL</td>
<td>95</td>
<td>125</td>
</tr>
<tr>
<td>Main Bus Continuous, Amps</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>Switch Load-Interruption, Amps</td>
<td>600</td>
<td>600</td>
</tr>
</tbody>
</table>

Switch Short-Circuit Ratings*

<table>
<thead>
<tr>
<th></th>
<th>25,000</th>
<th>25,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amps, RMS Symmetrical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MVA, 3-Phase Symmetrical at Rated Nominal Voltage</td>
<td>620</td>
<td>1,080</td>
</tr>
<tr>
<td>Fault-Closing Amps, RMS, Asym., 3-Time Duty Cycle**</td>
<td>40,000</td>
<td>40,000</td>
</tr>
</tbody>
</table>

*These are nominal switch ratings. Integrated pad-mounted unit may be limited by the fuse, bushing wells, bushing inserts, elbow and cable ratings used with these units. Most 200 ampere elbow and insert systems are limited to 10,000 amperes rms sym (1.3 max. asym. factor). Use fuse rating chart and elbow limitations to select proper overall short circuit ratings.

** The three-time duty-cycle fault-closing rating means that the switch can be closed three times into rated fault-current and remain operable and able to carry and interrupt its rated load current.

5. Certification of Ratings

The manufacturer shall be completely and solely responsible for the performance of the basic switch and fuse components as well as the complete integrated pad-mounted gear assembly as rated.

The manufacturer shall furnish, upon request, certification of ratings of the basic switch and fuse components and/or the integrated pad-mounted gear assembly consisting of the switch and fuse components in combination with the enclosure. This certification of the integrated unit shall include testing the pad-mounted gear to the fault-close requirements of the specification to assure the bus support system and components are adequate.

6. Submittals

When requested, the manufacturer shall furnish the following drawings and reports:

a) Layout showing dimensions, arrangements, electrical ratings, components and weights.

b) Certified test reports of similar manufactured units showing fault-closing capability and load-interrupting capability of switches and complete pad-mounted gear assembly based on maximum design voltage.

7. Compliance with Standards & Codes

The pad-mounted switchgear shall conform to or exceed the applicable requirements of the following codes and standards:

a) All portions of ANSI/IEEE C57.12.28, covering enclosure integrity for pad-mounted equipment.

b) Article 490.21(E) "Load Interrupters" in the National Electrical Code, which specifies that the interrupter switches in combination with power fuses shall safely withstand the effects of closing, carrying, and interrupting all possible currents up to the assigned maximum short-circuit rating.

c) All portions of IEEE C37.74, and all portions of ANSI C37.72 covering switch testing.

d) All portions of ANSI, IEEE, and NEMA standards applicable to the basic switch and fuse components.

8. Enclosure Design

To ensure a completely coordinated design, the pad-mounted gear shall be constructed in accordance with the minimum construction specifications of the fuse and/or switch manufacturer to provide adequate electrical clearances and adequate space for fuse handling.

In establishing the requirements for the enclosure design, consideration shall be given to all relevant factors such as controlled access and tamper resistance.
B. Construction - Assembly

1. Insulators, Bushings and Bushing Wells

   The interrupter-switch and fuse-mounting insulators and the bushings and bushing wells shall have the following material characteristics and restrictions:
   
   a) Operating experience of at least 15 years under similar conditions.
   
   b) Ablative action to ensure non-tracking properties.
   
   c) Adequate leakage distance established by test per IEC Standard 60507.
   
   d) Adequate strength for short-circuit stress established by test.
   
   e) Conformance with applicable ANSI standards.
   
   f) Homogeneity of the cycloaliphatic epoxy resin throughout each insulator, bushing and bushing well to provide maximum resistance to power arcs. Ablation due to high temperature from power arcs shall continuously expose more material of the same composition and properties so that no change in mechanical or electrical characteristics takes place because of arc-induced ablation. Furthermore, any surface damage to insulating components during installation or maintenance of the pad-mounted gear shall expose material of the same composition and properties so that insulating components with minor surface damage need not be replaced.
   
   g) Each insulator, bushing and bushing well shall be x-rayed to assure it is essentially void free. An alternate testing method may be used only by approval of the engineer.

2. High-Voltage Bus

   a) Bus and interconnections shall consist of bare aluminum bar of 56% IACS conductivity with an oxide-inhibiting agent at all bus joints.
   
   b) Bus and interconnections shall withstand the stresses associated with short circuits up through the maximum rating of the pad-mounted gear, including proper allowance for transient conditions.
   
   c) Bolted aluminum-to-aluminum connections shall be made with a suitable number of non-corrosive bolts and with two Belleville spring washers per bolt, one under the bolt head and one under the nut, or with a wide, flange-head bolt and one Belleville spring washer per bolt. As an alternate, bolted aluminum-to-aluminum connections shall be made with a suitable equivalent surface area, i.e., I-bolt and spring washer. Bolts shall be tightened to an appropriate torque to assure good electrical connection.

3. Ground-Connection Pads

   a) A ground connection pad shall be provided in each termination compartment of the pad-mounted gear.
   
   b) The ground connection pad shall be constructed of 1/4" thick, galvanized or stainless steel and have a NEMA 2-hole pattern for ground connections. The pad shall be welded to the enclosure and shall have a short-circuit rating equal to that of the integrated assembly.
   
   c) A full width copper grounding rod shall be provided in each cable terminating compartment.

C. Construction - Enclosure & Finish

1. Enclosure

   a) The pad-mounted enclosure shall be of unitized construction (not structural frame and bolted sheet) to maximize strength, minimize weight, and inhibit internal corrosion.
   
   b) The basic material for the enclosure, roof and doors shall be 11-gauge, hot-rolled, pickled-and-oiled steel sheet.
   
   c) All structural joints and butt joints shall be welded, and the external seams shall be ground flush and smooth. A welding process shall be employed that eliminates alkaline residues and minimizes distortion and spatter.
   
   d) To guard against unauthorized or inadvertent entry, enclosure construction shall not utilize any externally accessible hardware.
   
   e) The base shall consist of continuous 90-degree flanges, turned inward and welded at the corners, for bolting to the concrete pad.
   
   f) The door openings shall have 90-degree flanges, facing outward, that shall provide strength and rigidity as well as deep overlapping between doors and door openings to guard against water entry.
   
   g) In consideration of tamper resistance, the enclosure shall conform to or exceed the requirements of ANSI/IEEE C57.12.28.
   
   h) A heavy coat of insulating "no-drip" compound shall be applied to the inside surface of the roof to reduce condensation of moisture thereon.
   
   i) Lifting tabs shall be removable. Sockets for the lifting-tab bolts shall be blind-tapped. A protective material shall be placed between the lifting tabs and the enclosure to prevent the tabs from scratching the enclosure finish. This material shall be non-hygroscopic to prevent moisture from being absorbed.
   
   j) A steel (specify compartmented or non-compartmented) base spacer shall be provided to increase the elevation of live parts in the pad-mounted gear above the mounting pad by (specify 6, 12, 18, 24) inches.

2. Barrier Assembly

   Insulating interphase and end barriers shall be provided in each switch and fuse compartment as required to achieve necessary insulation levels. This barrier system shall be constructed of fiberglass reinforced polyester (NEMA rated GPO-3).

3. Doors

   a) Doors shall be constructed of 11-gauge hot-rolled, pickled-and-oiled steel sheet.
   
   b) Door edge flanges shall overlap with door opening flanges and shall be formed to create a mechanical maze that shall guard against water entry or discourage tampering or insertion of foreign objects.
   
   c) Doors shall have a minimum of three stainless steel hinges and hinge pins. The hinge pins shall be secured in place to guard against tampering.
D. Basic Components

1. Interrupter Switches

a) Interrupter switches shall have a three-time duty-cycle fault-closing rating equal to or exceeding the short circuit rating of the integrated pad-mounted gear assembly. These ratings define the ability to close the interrupter switch either alone (unfused) or in combination with the appropriate power fuses three times against a three-phase fault with asymmetrical current in at least one phase equal to the rated value, with the switch remaining operable and able to carry and interrupt rated current. Tests substantiating these ratings shall be performed at maximum design voltage with current applied for at least 10 cycles. Certified test abstracts establishing such ratings shall be furnished upon request.

b) Interrupter switches shall utilize a quick-make, quick-break mechanism installed by the switch manufacturer. The quick-make, quick-break mechanism shall be integrally mounted on the switch frame, and shall swiftly and positively open and close the interrupter switch independent of the speed of the switch operating handle.

c) Interrupter switches shall be operated by means of an externally accessible switch–operating hub. The switch–operating hub shall be located within a recessed stainless-steel pocket mounted on the side of the pad-mounted enclosure. The switch–operating hub pocket shall include a padlockable stainless-steel access cover that shall incorporate a hood to protect the padlock shackle from tampering. Labels or targets to indicate switch positions shall be provided in the switch operating hub pocket.

d) Each interrupter switch shall be completely assembled and adjusted by the switch manufacturer on a rigid mounting frame. The frame shall be of heavy-gauge steel construction.

e) Interrupter switch shall be provided with contact blades and interrupters for circuit closing, including fault-closing, continuous current carrying, and circuit interrupting. Spring loaded auxiliary blades shall not be permitted.

f) Circuit interruption shall be accomplished by use of an interrupter which is positively and inherently sequenced with the blade position. It shall not be possible for the blade and interrupter to get out of sequence.

g) Interrupter switches shall have a readily visible open gap when in the open position to allow positive verification of correct switch position. In addition, an open/close label shall be provided to give a visual indicator of switch position.

h) Each interrupter switch shall be provided with a switch operating handle. The switch–operating handle shall be secured to the inside of the switch–operating hub pocket and shall be stored behind the switch–operating hub access cover.

The following optional features may be specified:

i) Key interlocks shall be provided to prevent paralleling the two source interrupter switches.

j) Key interlocks shall be provided to guard against opening fuse compartment door(s) unless all switches (series tap switch only, where furnished) are locked open.

k) Provision to padlock switch–operating hub in open or closed position shall be provided.

l) Cable guides shall be provided to help orient cables at switch and bus compartment terminals.

m) Mounting provisions shall be provided to accommodate one three-phase fault indicator with three single-phase sensors in each switch compartment (except series tap switch, where furnished).
2. Switch Compartments

a) Switch terminals shall be equipped with 600 ampere rated bushings that include removable threaded studs to accommodate a choice of termination systems. Fuse terminals are equipped with 200 ampere rated bushing wells designed to accept 200 ampere bushing inserts. Bushings and bushing wells have interfaces in accordance with ANSI/IEEE Standard 386 (ANSI Standard C119.2) to accept all standard separable insulated connectors and inserts. Parking stands are provided adjacent to each bushing and bushing well to accommodate feed-throughs and standoff insulators.

b) All medium-voltage switch and fuse components are completely encased in an inner grounded steel compartment. The component compartment floor shall be of 18-gauge galvanized steel sheet to exclude foliage and animals.

c) Viewing windows are provided within the termination compartments to allow visual verification of switch position, observation of switch-position open/close labels and inspection of blown-fuse indicators on power fuses.

3. Fuse Compartment

a) Fuse access panels shall have a mechanical interlock that guards against gaining access to the fuse before opening the loadbreak separable insulated connector at the fuse terminal.

b) The fuse shall be accessible only when de-energized and isolated — for full-view non-loadbreak disconnection and removal with a shotgun stick. This mounting features positive latching in both the energized and de-energized positions. When latched in the open position, the de-energized fuse is electrically isolated and readily accessible to operating personnel for removal.

c) Access to the compartment containing energized components when fuses are being changed shall be blocked by a latched GPO-3 panel.

d) Individual parking stands shall be provided for each fuse mounting to allow convenient installation of elbow accessories to accommodate grounding. A ground rod shall be installed across the full width of the fuse compartments for connecting of cable concentric neutrals. Fuse phases shall be equipped with cable guides to assist in cable training and to prevent cables from interfering with movement of the fuse-access panel.

e) To provide maximum service life and to prevent corrosion of moving parts, all latches and pivots in the fuse-handling mechanism shall be either painted steel, stainless steel, or zinc-plated.

The following optional features may be specified:

f) Fuse storage hooks shall be provided on fuse-termination compartment access door(s). Each set of hooks shall allow the storing of three spare fuseholder or fuse units with end fittings for power fuses. Storage hooks shall be for two holders when current-limiting fuses are used.

E. Labeling

1. Warning Signs

All external doors shall be provided with approved "WARNING — HIGH VOLTAGE — KEEP OUT" signs.

2. Nameplate, Ratings Labels & Connection Diagrams

a) The outside of both the front and back shall be provided with nameplates indicating the manufacturer’s name, catalog number, model number, and date of manufacture.

b) The inside of each door shall be provided with a ratings label indicating the following: voltage ratings; main bus continuous rating; short-circuit ratings (amperes, RMS symmetrical and MVA three-phase symmetrical at rated nominal voltage); the type of fuse and its ratings including duty-cycle fault-closing capability; and interrupter switch ratings, including duty-cycle fault-closing capability and amperes, short-time, RMS (momentary asymmetrical and one-second symmetrical).

c) A three-line connection diagram showing interrupter switches, fuses and bus along with the manufacturer’s model number shall be provided on the inside of both the front and rear doors, and on the inside of each switch-operating hub access cover.

F. Accessories

End fittings or holders, and fuse units or refill units for original installation, as well as spare fuse unit or refill unit for each fuse mounting, shall be furnished in accordance with the client’s requirements when specified.
The 6-Compartment FP Dead-Front PSE Pad-Mounted Switchgear expands the load segmentation possibilities for underground distribution systems by allowing larger concentrated loads to be served from a single enclosure, requiring less space and less expense.

Features:
- Dead-Front 600-Ampere Switch Compartments
- Dead-Front 200-Ampere Fuse Compartments
- Manual, Automatic Source Transfer, and SCADA-Controlled
- 5-600 ampere switches in a bus-tie arrangement
- 4—600-ampere switches plus two sets of fused feeders in a single enclosure
- 2—600-ampere switches plus four sets of fused feeders in a single enclosure
- Meets all preferred and optional ratings in IEEE C37.74, and meets all ANSI C37.72 switching requirements.
- Meets Enclosure Security requirements in ANSI C57.12.28
- Other configurations as needed, consult factory
- 1200-ampere models, consult factory

Federal Pacific 6-Compartment, Dead-Front PSE Pad-Mounted Switchgear provides the convenience of installing a single enclosure with two 600-ampere switches and up to four three-phase sets of fuses, or five 600-ampere switches in a bus-tie arrangement. Installations with concentrated loads can now be served from a single switchgear assembly. The six-compartment configurations require less land space than two four-compartment units, which was the only choice in the past. In addition, the 6-compartment units are more economical than two four-compartment units.
Enclosure integrity and security is assured with FP Dead-Front Type PSE Pad-Mounted Switchgear.

Dead-Front switches, in compartments on left and on right, utilize 600-ampere bushings, accommodating 600-ampere elbow connectors. Dead-Front fuses in center compartment accommodate 200-ampere load-break inserts and elbows.
Interior view of fuse-termination compartments of FP Dead-Front 6-Compartment Pad-Mounted Switchgear accommodates a wide variety of fuses rated to 200-amperes.
Typical configurations for models of FP Dead-Front 6-Compartment Pad-Mounted Switchgear. Consult factory for other available circuit configurations. Dimensions vary depending on circuit configuration, however, a typical dimension is 50"H x 123"W x 72.75"D. Do not use dimensions for construction purposes.