POWER DESIGN INC.

15/25/35 kV PRIMARY METERING SWITHGEAR

1.0 SCOPE

This specification applies to padmounted outdoor 15/25 KV primary metering switchgear. Unit shall be designed for mounting on a fiberglass box pad or concrete pad at ground level. The switchgear shall be in complete conformance with all applicable NEC, ANSI, IEEE, and NEMA standards in addition to IEEE C57.12.28, Padmounted Equipment Enclosure Integrity Standard.

2.0 CONSTRUCTION

1. The switchgear components, dimensions and construction shall be as shown on the drawing.
2. The unit shall be constructed on a free-standing galvanized frame designed per applicable standards to withstand the electrical and mechanical stresses.
3. A 3/8” diameter solid copper ground bar shall be mounted on each side of frame with transformer and meter base grounds securely tied to it.
4. Frame lifting and grounding provisions shall be provided.
5. The unit shall be completely assembled at the factory.
6. The unit shall use a 15/25/35 kV separable insulated connector system per IEEE Standard 386 and outdoor style instrument transformers separated by a galvanized steel bushing plate. A second galvanized steel swing out plate shall be supplied on the back to isolate the transformers and provide a mounting surface for an test switch and other equipment.

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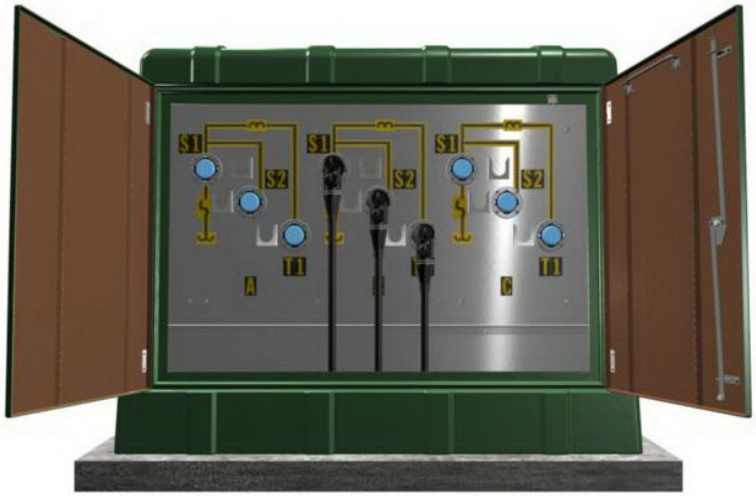
7. The schematic shall be applied to the bushing plate with a black line on yellow reflective tape. Transformer and fuse symbols shall be included in the schematic. Source and tap bushings shall be identified and numbered .



8. Phase and ground barriers shall be provided with appropriate clearances for the rated voltage. The barriers shall be made of 3/16" NEMA GPO-3 material. A ¼" clear lexan barrier shall be mounted behind the swing out panel to provide visual inspection of the fuses and instrument transformers without removing the safety barrier.

9. Bushing arrangement and amperage shall be provided as shown on the drawing. Cable to air bushings shall be bolt in type with clamping ring and gasket to allow for field replacement. Bushings shall be rated either 200A or 600A, 15/25/35kV 95/125/150 kV BIL

10. Copper bus bar shall be provided and be rated for either 200a or 600A.

11. Outdoor type instrument transformers shall be supplied, mounted and wired to the test switch. Flex-poly conduit shall be provided between transformers and test switch to house secondary wire. A 10 pole test switch shall be provided.

12. Current transformers shall be mounted using a sliding bracket assembly so they can be installed/removed with the enclosure in place. A stainless steel plate shall be bolted to each side of the transformer base which slides into place on the frame.

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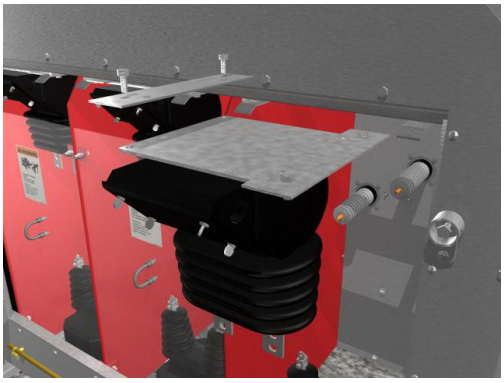
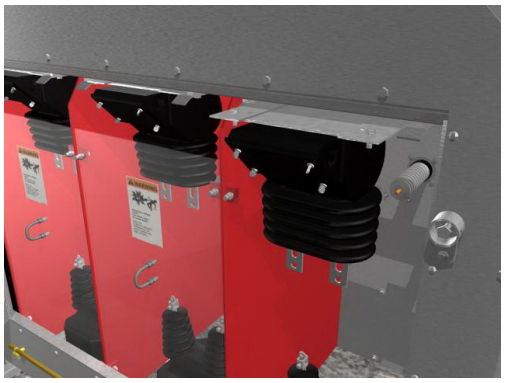
13. The switchgear shall be housed in a fiberglass outdoor, weatherproof housing sized to cover the unit.





14. Fiberglass laminate shall be 3/16" nominal thickness except where local reinforcement is required. A SS lifting eye shall be supplied on each side of the enclosure for lifting.

15. Fiberglass shall not support combustion and be self extinguishing with a UL 94 Flame Rating of HB.

16. Enclosure exterior and interior shall be gel-coated to .014 inch nominal thickness. The exterior shall be an ISO/NPG type (isophthalic/neopentyl glycol) munsell green color for maxium color retention and weatherability. Total color change (delta E) shall be less than 3.0 after 1500 hours of accelerated exposure QUV testing per ASTM G154. Interior shall be gel coated white for reflective purposes.

17. Locking device shall be equivalent to AISI SS and provide both a 1/2”-13 captive penta bolt and padlocking provisions. The locking device shall be coordinated such that the padlock may not be inserted into the devise until the access top is fully latched and the penta head bolt is securely engaged. Likewise the padlock must removed before disengaging the penta head bolt.

18. All exterior and interior hardware enclosure shall be made of AISI 304 SS. Doors shall have two AISI 304 SS. Door shall have two AISI 304 SS slip joint hinges with minimum 5/16” pins for rigid support and to allow easy field disassembly.

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19. Enclosure shall be removable without disturbing enclosed equipment or cables.

20. A stainless steel identification plate shall be affixed outside the enclosure which identifies the manufacturer; model and serial number of the equipment; KV rating; and date of manufacture.

21. Stainless steel louvers shall be provided with stainless steel screen baffle for adequate air flow and heat dissipation as required for enclosed equipment.

22. When required a fiberglass box pad shall be supplied in place of a cement pad for mounting of the frame and enclosure. The box pad shall be 30” high with an opening to allow the high voltage cables to enter.

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3.0 TESTING & STANDARDS

1. Physical properties of the finished laminate shall be per the latest edition of the following standards and minimum values:

Tensile Properties of Plastics	ASTM D638	10,000 psi
Tensile Modulus of Elasticity	ASTM D638	13,000 kpsi
Flexural Properties of Reinforced Plastics	ASTM D790	20,000 psi
Flexural Modulus of Elasticity	ASTM D790	13,000 kpsi
Compressive Properties of Rigid Plastics	ASTM D695	15,000 psi
Izod Pendulum Impact Resistance of Plastics	ASTM D256	5.5 ft/lb/in
Barcol Indentation Hardness of Rigid Plastics	ASTM D2583	42-46

2. The enclosure shall meet or exceed the latest edition of IEEE C57.12.28, Pad-mounted Equipment Enclosure Integrity Standard. Pry, pull, wire probe, deflection, and operation tests shall be performed as outlined in the Standard along with coating system performance requirements.

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For more information, check out video or our web site. The following are the links;

Video: YouTube Primary Metering Switchgear.

Web Site: http:/www.powerdesigninc.com/ps/ps_primary_three_phase.html