

Myers Power Products Metal Enclosed Switchgear

Myers Power Products manufactures Metal Enclosed Switchgear that is an integrated assembly of load interrupter switches, current limiting or expulsion fuses and bus work in a metal enclosure for protection within the medium voltage circuit

Enclosure Construction

The enclosure construction is a universal frame type, using die-formed, welded and/or bolted members. To facilitate installation and maintenance of cables and bus, the top and rear covers are removable. All enclosing covers and doors are fabricated from not less than 11 gauge steel. Each switch cubicle has a single, full-length, flanged front door over the switch and/or fuse assembly. The flanged door closes over a projecting door frame. The door is equipped with two rotary latch type handles. Provision is made for operating the switch and storing the removable handle without opening the full length door. A rectangular, high impact type contact viewing window is provided in the door over the switch, and backed up by a grounded metal barrier punched with a diamond pattern to assure safety but still allow a full view of the switch blades. Switchgear assemblies comprising cubicles is group mounted with at least 11 gauge steel side sheets between adjacent sections. Each unit is adequately braced to prevent distortion of the cubicle under normal operating conditions as well as during interruption of short circuit currents.

Outdoor units have a sloped drip-proof roof. All openings are screened to prevent the entrance of small animals, and barriered to inhibit the entrance of snow, sand, etc. One space heater is provided in each cubicle. Power for the space heater shall be furnished by others. The structure shall be provided with adequate liting means and shall be capable of being rolled or lifted into installation position and bolted to the floor. Adequate conduit space shall be provided to meet the N.E.C. requirements. Next Myers installs the bus.

Main Bus and Connections

The main bus consist of copper bus bar with silver-plated connections mounted on NEMA class rated insulators for the voltage class and BIL specified. The design of the busses, connections and supports are consistent with the mechanical stresses produced by short circuit current equivalent to the interrupting current rating of the associated switch and fuse at service voltage. All hardware used on conductors are of a high tensile strength and anti-corrosive plating. A ground lug is furnished, firmly secured to the structure for a single cubicle. For line-ups, a ground bus is furnished to extend the entire length of the switchgear. Lugs are provided for copper ground cable at each end of the bus. All lugs are of the solderless type suitable for copper or aluminum cable of sizes indicated on drawings. The switch is installed next.

Interrupter Switches

The load interrupter switches are be quick-make, quick-break, three-pole gang operated, with stored energy operation. Each switch or switch and fuse assembly shall have glass polyester insulating barriers between phases and between the outer phases and the enclosure.

Switch Operation

A quick-make, quick-break manual operating mechanism is supplied which utilizes a heavy duty coil spring to provide powerful opening and closing action of the switch. To assure reliable operation, the spring charging mechanism consist of a rigid metal-to-metal linkage and does not depend on chains or cables which are subject to failure. The speed of opening and closing of the switch is independent of the operator. The interrupter switch has separate main, make and break contacts to provide maximum endurance for fault close and load interrupting duty. Arcing contacts are spring loaded on make and break and are so designed as to be last in and last out. Arc interruption takes place within urea formaldehyde arc chutes which produce a high dielectric gas to assist interruption. The operating mechanism is designed to provide sufficient power to overcome the blow-out forces when closing the switch into a fault.

Safety Interlocking

The full height door is hinge and interlocked with the switch shaft so that the switch must be opened before access to the fuses is possible and the door must be closed before the switch can be closed.

Insulation

All insulation supporting current carrying parts are either flame retardant, non-tracking glass polyester or porcelain.

Power Fuses

Fault protection shall be furnished by fuses of one of the two types specified below as indicated on the contract drawings.

Fuses shall be:

1. Current limiting type of the self-contained design to provide fast clean interruption with minimum let-through current. Fuses will operate during the first half cycle on maximum fault conditions with no expulsion of gases or vapor.
2. Boric acid type which expels gases and vapor, but is readily re-fusible with low-cost refill units.

All fuses shall be positively locked in position with provision for easy removal and replacement from the front without the use of special tools.

Paint and Finish

External and internal steel surfaces are thoroughly cleaned and phosphatized prior to application of paint. Paint to be electrostatically deposited. Final finish 2 mil minimum to meet ANSI C37.20.3 and U.L. 1332 standards. Color to be ANSI-61 light gray. Please see our SP1B-R paint procedure.

Technical Details

Switch Ratings

Max. KV	Nom. KV	Impulse Withstand KV	Amperes Continuous	Amperes Interrupter	Momentary (Switch Closed) Asym.	Fault Close Asym.
5.0	4.8	60	600 600 1200	600 600 1200	40,000 80,000 80,000	40,000 61,000 61,000
15.0	13.8	95	600 600 1200 600 1200	600 600 1200 600 1200	40,000 80,000 80,000 80,000 80,000	40,000 40,000 61,000 61,000 61,000
25.8	23	125	600 600	600 600	40,000 60,000	40,000 60,000
38.0	34.5	150	600 600	600 600	40,000 60,000	30,000 30,000

Approximate Weights

Switch Description	Indoor	Outdoor
	Lbs.	Lbs.
5 or 15 KV Class		
Non-fused Switch	1500	1800
Fuses (3), Add	200	200
Indoor Transition	300	
Outdoor Throat		200
25.8 or 38KV Class		
Non-fused Switch	2000	2400
Fuses (3), Add	300	300
Indoor Transition	1100	
		900
Motor Operator Adder	400	400