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TYPICAL SPECIFICATIONS

SG6, SFG6 & SG6F Subsurface/Vault Switches

This specification outlines the requirements for a three phase, group operated, 50/60 Hz sectionalizing subsurface/vault switch tested to ANSI C37.71 featuring deadfront, compact, sealed, corrosion resistant construction.

A. GENERAL:

Each switch shall have _____(Qty) 3-phase entrance ways and ____(Qty) switched way(s).

The unit will include welded flange 200Amp deepwell or 600 Amp apparatus bushings per ANSI/IEEE 386. (Bolted and gasketed bushings are not acceptable) A one-line diagram, indicating the circuit configuration, number of switched ways, and type of bushings required will accompany this specification.

Switches must be furnished factory filled with an electrical grade of non-toxic, non-flammable SF_6 gas, conforming to ASTM D-2472. A pressure gauge, which provides visual status of the insulating dielectric, must be included.

The completed unit must be capable of withstanding internal failure without explosion or fire and shall be
capable of being mounted in any position for best cable training and operation.

B. SWITCH CONSTRUCTION:

The switch shall use deadfront, compact, sealed construction. A corrosion-resistant stainless steel tank shall enclose the contact system, interconnecting bus, operating mechanisms, and bushings. The switch must be maintenance free, all welded construction, eliminating the use of gasketed seals. T.I.G. inert gas welding with stainless steel filler rod shall be used to eliminate pinhole leaks and corrosion.
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The operating shafts must be sealed by a flexible stainless steel bellows (O-ring seals are not acceptable).

Unless otherwise specified, cable connections, and operating accessories shall be located so only single side access is required for operation and installation. Operating handles shall be capable of being removed and stored or permanently attached.

Movement of the operating handles will actuate an internal spring mechanism causing the switch contacts to open or close and latch into position in a quick make, quick break operation.

The spring operator will use compression springs for long life and will provide positive position indication. The switch contacts and interconnecting bus shall be plated copper with Belleville washers and locking fasteners to provide consistent pressure at bolted connections.

The contacts shall be self-aligning, wiping type, incorporating tungsten copper arcing tips to prevent wear.

A puffer contact system for fast arc extinction along with a special internal absorbent shall be used for improved performance and to prevent arc by-products.

C. ELECTRICAL RATINGS AND STANDARDS:

The switches shall be designed, tested and built per applicable sections of ANSI C37.71 Standard and IEC 265 International Standards. The assembled switch assembly shall be rated:

	PUFFER	PUFFER	PUFFER
Maximum Design Voltage, KV	15.5	27	38
BIL Impulse Withstand, KV	95	125	150
Open Gap BIL Flashover Withstand, KV	200	200	200
One Minute AC Withstand, KV	35	60	70
Fifteen Minute DC Withstand, KV	66	96	103
Load Interrupting, Amps	600	600	600
Asymmetrical Momentary & Three Operation Fault Close, KA. (Optional Ratings)	22.5 (32) (40)	22.5 (32) (40)	22.5 (32)
Symmetrical One Second Rating, KA. (Optional Ratings)	15 (20) (25)	15 (20) (25)	15 (20)
Continuous Current, A.	600	600	600
Operations-600A load interrupting	1,000	1,000	1,000
Overload Interrupting Capability, A	3,000	2,500	2,000

D. STANDARD COMPONENTS:

- Removable operating handles with padlock provision in the open and closed position, capable of operation by hookstick or rope with direction of movement clearly indicated.
- Stainless steel nameplates providing information including ratings, contact position indication, circuit configuration and phase identification.
- Colour coded pressure gauge for visual indication of normal operating range, enclosed in a protective housing to prevent damage.
- Brass fill valve for field addition of SF_6, protected and sealed with a removable cap.
- Clamp type ground lugs, one for each set of bushings.
- Stainless steel switch tank for maximum corrosion resistance.
- 200 Amp deepwell or 600 Amp apparatus welded bushings, with protective shipping caps (elbows and inserts furnished by user).
- Lifting and mounting provisions.

E. OPTIONAL FEATURES:

- Visible break with contacts visible through viewing windows and clear puffer tubes.
- Visible break by external neon voltage indicator lights.
- Operating handle orientation adapters.
- Mechanical or key interlocks.
- Low pressure sensing device.
- Operations counter.
- Manual switching with remote cable operator.
- Motor-operators for local, remote or SCADA switching.
- Motor-operators, voltage and current sensors for Automatic Load Transfer Switching.
- Wall mounted parking stands.
- SF6 refill kit complete with regulator and hose.

F. FUSING REQUIREMENTS:

Protection for load taps can be accomplished in three ways:
1. Drywell Canister Fuse-Max. 50A rating or paralleling 2 fuses, maximum 80A rating (SG6F)
2. Encapsulated Fuses (SFG6)
3. Resettable Fault Interrupter (RFI-SRG6)

G. FACTORY PRODUCTION TESTS:

100% production testing shall include a mass spectrometer leak test, contact resistance, mechanical operation, AC one-minute withstand and corona extinction tests as well as bulk SF6 moisture content.

H. CABLE ENTRANCES:

Switches will include 200 Amp deepwell or 600 Amp apparatus welded bushings per ANSI/IEEE 386.