

## 1. Scope

This Specification covers the requirements for furnishing and delivering horizontal crossarm mounted three-pole, unitized, group operated load break switches and accessories for use on a 60 Hz, 12.47 Grounded Y/7.2kV electrical distribution system.

## 3. Reference Standards

All characteristics, definitions, terminology, voltage designations and tests, except as otherwise specified herein, shall be in accordance with the following industry standards for distribution, power and regulating transformers. When the following standards are superseded by an approved revision, the revision shall apply.

### Industry Standards

**ANSI C37.32-2012** High-Voltage Switches, Bus Supports, and Accessories-Schedules of Preferred Ratings, Construction Guidelines and Specifications

**IEEE 1247** IEEE Standard for Interrupter Switches for Alternating Current, Rated Above 1000V

### District Standards

[Material Standard 386202.1](#) 2-1/4" Labels for Marking District Owned Equipment

[Material Standard 890526.1](#) Padmount Equipment Danger Label

[Material Standard 890534.1](#) Padmount Equipment Warning Label

## 4. General

15kV 600A group operated unitized load break switches shall be factory assembled and designed for horizontal crossarm mounting on single pole structures. All three switch mechanisms shall be factory adjusted for proper alignment and simultaneous opening or closing.

Switches shall be capable of up to 50 feet of mounting distance between the control handle and switch mounting crossarm.

The separation between the center phase switch and the center of the pole must be 24".

Refer to the Figure 1 for switch spacings.

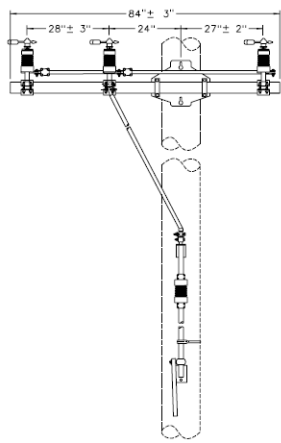
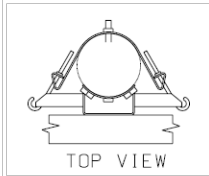


Figure 1



## 5. Material ID Number

Material ID Description:

**506743** Switch, 15kV 600A Group Operated Unitized Load Break Switch

## 6. Ratings

The switchgear shall have the following ratings:

Power Frequency	60 Hz
Nominal Voltage	15kV
Maximum Voltage	15.5kV
BIL	110 kV
Max. Continuous Current.	600 A
Short Circuit Current One-Second Short Time Withstand, RMS Symmetrical.	25,000 A
Fault Close 2X Duty Cycle, RMS Symmetrica	30,000 A
Load Interrupter	
Switches Continuous Current	900 A
Interrupting Current	900 A
Deadend Strength Ratings	
One Side per Conductor	750 lb
Both Sides per Conductor	8,000 lb

At the District's request, the manufacturer shall furnish certified tests establishing the electrical ratings of the switch.

## 7 Components

### 7.1 Switches

Switches shall be side break integer style with field replaceable load interrupters. Switches shall be equipped with NEMA standard two hole terminal lugs. Terminal lugs and switch contacts shall be silver plated. Switches shall be capable of opening and closing under 3/8" ice formation.

### 7.2 Insulators

Switch mounting insulators shall be station post type, cycloaliphatic epoxy resin or silicone polymer. Porcelain insulators are not acceptable. Switches with torsional steel control rods shall be supplied with one 15kV class polymeric control rod insulator.

### 7.3 Crossarm

The switch shall be mounted on a pultruded fiberglass crossarm. The crossarm shall have a gray UV resistant coating and shall be filled with closed cell foam. Crossarm ends shall be sealed.

### 7.4 Mounting Hardware

The switch mounting crossarm shall be equipped with an integral brace-less gain base mounting plate, manufactured from heavy gauge galvanized steel or 6061-T6 extruded aluminum alloy. The mounting base shall include a metal mounting band for side-to-side adjustment of the switch assembly prior to final tightening of the mounting bolts (see Top View on previous page).

### 7.5 Operating Rods

Each switch shall be supplied with sufficient operating rod, guide bearings and couplings to allow installations with up to 36 feet of separation between the switch and control handle. Each section of control rod shall be a maximum of 10'-0" in length. Torsional control rods shall be 1-1/2" IPS galvanized steel pipe and shall include an insulated section of control rod. Reciprocating control rods shall be 1" OD fiberglass rod.

### 7.6 Operating Mechanism

The switch control handle shall have provisions for padlocking in the open and closed position. The control handle shall be equipped with a gained base for mounting to a curved surface and shall have provisions for alignment with the control rod after installation. Steel control rods shall include a flexible ground strap for grounding the operating handle and control rod.

## 8. Packaging

Each switch assembly, complete with switch, mounting hardware, operating rods and mechanism and instructions for installation, operation and maintenance of the switch shall be shipped in one crate.

## 9. Nameplate

A durable weatherproof and corrosion-proof metal nameplate shall be permanently and securely affixed to each switch by the manufacturer. It shall be permanently and indelibly marked with the following: manufacturer’s name and address, month/year of manufacture, manufacturer’s model or type designation, serial number, rated maximum voltage, BIL, continuous current, interrupting current, momentary (3 sec) current, and 10-cycle current.

## 10. Equipment Data Sheet

Each shipment of switches shall include a digital spreadsheet of all switches in the shipment and their nameplate data. The spreadsheet shall be formatted to the District’s requirements shown below. Prior to delivery of the switches, the spreadsheet shall be emailed to the District’s Standards Department (standards2@snopud.com).

The following table describes the layout of the digital spreadsheet. Each column in the spreadsheet shall have a header with the field name and each row shall represent an individual piece of equipment. On request, the District will provide a template of the spreadsheet to the manufacturer.

Column	Field Name	Data Type	Sample Date	Valid Values
1	Manufacturer Serial Number	Char(30)	JR102-2	
2*	Equipment Number	BLANK	BLANK	
3	Object Type	Char(10)	ED_SWITCH	ED_SWITCH
4*	Start Up Date	BLANK	BLANK	
5	Manufacturer	Char(30)	S&C	
6	Model Number	Char(20)	1037-418997-000	
7	Manufacturer Part Number	Char(30)	1765201303	
8	Weight	Numeric(10,2)	1213.1	
9	Unit of Weight	Enum	LB	[LB, KG, TON]
10	Acquisition Value	Numeric(10,2)	3000.02	In USD
11*	Acquisition Date	BLANK	BLANK	
12	Manufacturer Country	Char(2)	US	[US, MX, CA] - contact for others
13	Construction Year	Char(4)	2017	YYYY
14	Construction Month	Char(2)	12	MM
15*	District Number	BLANK	BLANK	
16	MATERIAL_ID	Char(7)	5000786	PUD Internal Material ID
17	PURCH_ORDER_NUMBER	Char(10)	4500014093	PUD Purchase Order Number
18	PO_LINE_NUMBER	Char(2)	1	PUD Purchase Order Line Number
19	FLDAMPACITY	Numeric(8,2)	600	

\*Column values must be blank and will be filled out by the District