

**15.5 kV, Three-phase, SF6, Multi-purpose Switchgear,
 Manually Controlled**



1. Scope

This standard covers 15.5 kV, three-phase, SF6-insulated, multi-purpose, manually controlled switchgear and related accessories.

This standard applies to the following Seattle City Light (SCL) stock numbers:

# of Ways	Style	Remote Low-Pressure Alarm Contacts (R-12 feature)		Section
		Yes	No	
2	Wet	013384	–	10.1
3	Wet	013345	013148 ^a	10.2
4	Wet	013346	013149 ^a	10.3

Note:

a. No purchase

The remote, portable motor operator associated with this switchgear is described in Section 11.

2. Application

This switchgear is intended for use on 13.8 kV, 3-wire delta, three-phase, 60 Hz systems where the available fault current is less than 25 kA rms symmetrical.

All switches are provided with viewing windows to observe open gaps, ground positions, ground bus, and fault trip indicators (if so equipped).

Refer to SCL 9202.17 for detailed application information.

3. Industry Standards

Except as modified by this standard, switchgear shall meet the applicable requirements of the latest revisions of:

IEEE 386 - Standard for Separable Insulated Connector Systems for Power Distribution Systems above 600 V

IEEE C37.74 – Standard Requirements for Subsurface, Vault, and Padmounted Load-Interrupter Switchgear and Fused Load-Interrupter Switchgear for Alternating Current Systems up to 38 kV

4. Construction

4.1 General

The switchgear assembly shall be integrally designed and produced by the manufacturer of the individual switch components. The manufacturer shall be solely responsible for the performance of the individual switch components as well as the assembly.

Padmount style switch cabinets shall be sized to accommodate the use of S&C Electric portable (remote) motor operators.

All switchgear components shall be factory assembled and tested.

4.2 Design Changes

The manufacturer shall inform SCL in writing of all design changes that could affect the understood or published capabilities of the switchgear.

4.3 Quality

Switchgear design and construction shall be of high quality and provide safe and reliable operation with minimal maintenance over the life of the product.

4.4 Switch Ratings

Switchgear shall have the following basic electrical ratings:

Maximum voltage	15.5 kV, rms
Number of phases	3
Power frequency	60 Hz
Lightning-impulse withstand voltage (BIL)	95 kV, crest
Short-time (1 s) withstand current	25 kA, rms symmetrical
Momentary (10 cycles) withstand current	40 kA, rms asymmetrical

5. Nameplate

Each switch shall be provided with a nameplate that meets the requirements of IEEE C37.71.

Each switch shall be provided with a label that states the amount of SF6 gas (in pounds) contained within the unit's tank.

6. Documentation

One instruction book shall be securely attached to each switch in an ultraviolet light-resistant envelope.

Provision shall be made for SCL to obtain PDF files of all relevant, switch-specific documentation, such as:

- Installation instructions
 - Operation and maintenance instructions
 - Outline drawings
 - Wiring and schematic drawings
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7. Packaging

Each switch shall be packaged in its own crate and delivered on its own pallet.

The pallet shall be compatible with either a pallet jack or forklift.

The two openings for the pallet jack or forklift shall have a minimum height of 4 in and width of 21 in.

The crate and pallet, including slats, blocking, and wedges, shall be unpainted wood.

The outside of each crate shall be permanently and clearly marked with:

- Manufacturer name or symbol
 - Seattle City Light purchase order number
 - Seattle City Light stock number
 - Manufacturer equipment serial number
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8. Shipping

Switches may be delivered on enclosed, covered, or flatbed trucks. If switches are delivered on a flatbed truck, switches shall be side-loaded. Because Washington State law requires a 10-in minimum side board when driving a forklift or pallet jack onto the bed of a truck or trailer, most flatbed trucks or trailers must be side-loaded to ease off-loading.

9. Issuance

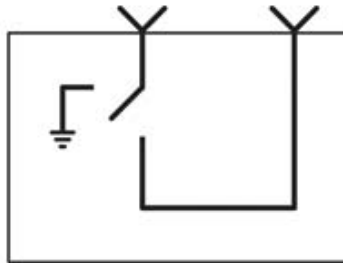
Stock Unit: EA

10. Detailed Requirements

10.1 2-Way, Wet Vault Style

Stock No.	S&C Electric Co. Vista Switch Catalog No.
013384	852102-M1-V4-L2-O-R12
<i>where:</i>	
85 =	25 kA rms symmetrical short-circuit rating
210 =	Two-way, one load interrupting way, zero fault interrupting ways
2 =	15.5 kV voltage rating, maximum
M1 =	600 A bushings (without studs) at all terminals
V4 =	Wet vault mounted style. Includes stainless steel tank and submersible wiring and control housings.
L2 =	Potential indication with test feature with provision for low-voltage phasing
O =	Two-hole ground pad, one per way, located below bushings or bushing wells (in lieu of standard one ground pad per tank)
R12 =	Remote low-pressure alarm – includes internal contact for remote low-pressure indication, with wiring to outside of tank

Figure 10.1. 2-Way, Wet Vault Style Switch



10.2 3-Way, Wet Vault Style

Stock No.	S&C Electric Co. Vista Switch Catalog No.
013345	853302-M1-V4-L2-O-R12
013148 ^a	853302-M1-V4-L2-O

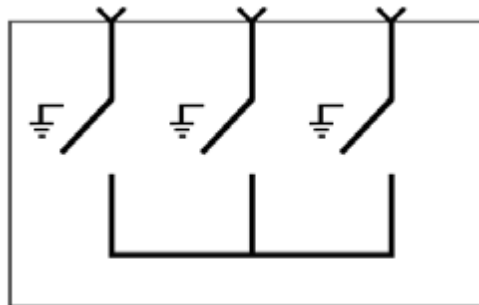
where:

85 =	25 kA rms symmetrical short-circuit rating
330 =	Three-way, three load interrupting ways, zero fault interrupting ways
2 =	15.5 kV voltage rating, maximum
M1 =	600 A bushings (without studs) at all terminals
V4 =	Wet vault mounted style. Includes stainless steel tank and submersible wiring and control housings.
L2 =	Potential indication with test feature with provision for low-voltage phasing
O =	Two-hole ground pad, one per way, located below bushings or bushing wells (in lieu of standard one ground pad per tank)
R12 =	Remote low-pressure alarm – includes internal contact for remote low-pressure indication, with wiring to outside of tank

Note:

a. No purchase

Figure 10.2. 3-Way, Wet Vault Style Switch



10.3 4-Way, Wet Vault Style

Stock No.	S&C Electric Co. Vista Switch Catalog No.
013346	854402-M1-V4-L2-O-R12
013149 ^a	854402-M1-V4-L2-O

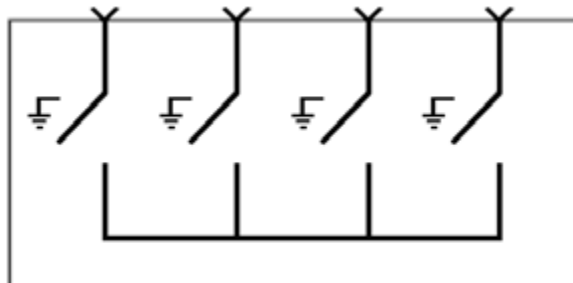
where:

85 =	25 kA rms symmetrical short-circuit rating
440 =	Four-way, four load interrupting ways, zero fault interrupting ways
2 =	15.5 kV voltage rating, maximum
M1 =	600 A bushings (without studs) at all terminals
V4 =	Wet vault mounted style. Includes stainless steel tank and submersible wiring and control housings.
L2 =	Potential indication with test feature with provision for low-voltage phasing
O =	Two-hole ground pad, one per way, located below bushings or bushing wells (in lieu of standard one ground pad per tank)
R12 =	Remote low-pressure alarm – includes internal contact for remote low-pressure indication, with wiring to outside of tank

Note:

a. No purchase

Figure 10.3. 4-Way, Wet Vault Style Switch



11. Accessories

11.1 Remote (Portable) Motor Operator

Stock No.	S&C Electric Co. Catalog No.	Description
None ^a	38323R1	Remote (portable) motor operator. Kit includes carrying case and 50-ft cable with remote control.

Note:

a. Obtain from Tool Room

Figure 11a. Remote (Portable) Motor Operator



Figure 11b. 50-ft Cable with Remote Control



11.2 Anchor Bracket

Stock No.	S&C Electric Co. Catalog No.	Description
013710	CD-1720	Anchor bracket with single slotted hole for 5/8-in anchor bolt. Used to secure PMH- and Vista-type switchgear to concrete pads or floors when original brackets are missing.

Figure 11.2. Anchor Bracket



12. References

SCL Design Standard 9202.17; "Vista Switch Application Guide"

13. Sources

S&C 681-31; Vista Underground Distribution Switchgear, Specification Bulletin, October 29, 2007; S&C Electric Company

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