



## Order Specification for Vertical-Break Switches

### 1.00 Switch

- 1.01 Number of switches required \_\_\_\_\_
- 1.02 Switches shall be aluminum (type VIPA) \_\_\_\_\_, copper (type VIPC) \_\_\_\_\_
- 1.03 Mounting orientation shall be horizontal upright \_\_\_\_\_, vertical \_\_\_\_\_, under-hung \_\_\_\_\_, or phase over phase \_\_\_\_\_, other \_\_\_\_\_
- 1.04 Insulator orientation shall be parallel \_\_\_\_\_, slant "Vee" \_\_\_\_\_, full "Vee" \_\_\_\_\_
- 1.05 Nominal Voltage \_\_\_\_\_ kV (*Specify 15, 23, 34.5, 46, 69, 115, 138, 161, 230 or 345*)
- 1.06 BIL Rating \_\_\_\_\_ kV (*Specify 110, 150, 200, 250, 350, 550, 650, 750, 900, 1050 or 1300*)
- 1.07 Continuous Current Rating \_\_\_\_\_ Amps (*Specify 600, 1200, 2000 or 3000*)
- 1.08 Momentary Current Rating \_\_\_\_\_ kA (*Specify 40, 61 or 100*)
- 1.09 Individual switch pole units shall be factory pre-assembled (live parts on insulators) \_\_\_\_\_, dis-assembled (live parts on switch bases) \_\_\_\_\_

### 2.00 Arcing Horns

- 2.01 Switches shall be \_\_\_\_\_, shall not be \_\_\_\_\_ furnished with wipe-type horns (standard equipment)
- 2.02 Switches shall be \_\_\_\_\_, shall not be \_\_\_\_\_ furnished with high-speed whips (optional equipment at additional cost)
- 2.03 Arcing horns to be capable of breaking \_\_\_\_\_ amperes of charging current

### 3.00 Interrupters

- 3.01 Switches shall be \_\_\_\_\_, shall not be \_\_\_\_\_ furnished with vacuum interrupters
- 3.02 Interrupting requirements include line dropping \_\_\_\_\_, load dropping \_\_\_\_\_, loop splitting (breaking parallel) \_\_\_\_\_
- 3.03 Expected maximum recovery voltage rating \_\_\_\_\_ kV of load interrupter devices

### 4.00 Insulators

- 4.01 Switches shall be \_\_\_\_\_, shall not be \_\_\_\_\_ furnished with insulators
- 4.02 Insulators shall be porcelain \_\_\_\_\_, polymer \_\_\_\_\_
- 4.03 Insulators shall be standard strength \_\_\_\_\_, high strength \_\_\_\_\_, resistive glazing \_\_\_\_\_, extra leakage distance \_\_\_\_\_



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- 4.04 BIL Rating \_\_\_\_\_ kV (*Specify 110, 150, 200, 250, 350, 550, 650, 750, 900, 1050 or 1300*)
- 4.05 Technical Reference Number \_\_\_\_\_

### 5.00 Switch Bases (Substation Applications)

- 5.01 Mounting (hole) pattern for switch bases available \_\_\_\_\_ (*yes or no*)
- 5.02 Required dimension from truss surface to top of terminal pad \_\_\_\_\_ to properly coordinate height of switch and base with bus
- 5.03 Special switch base fabrication requirements \_\_\_\_\_ (*yes or no*); fabrication details available \_\_\_\_\_ (*yes or no*)

### 6.00 Mounting Structure (Substation Applications)

- 6.01 Switch bases to be mounted on lattice truss \_\_\_\_\_, tubular truss \_\_\_\_\_, steel beam truss \_\_\_\_\_, wood beam truss \_\_\_\_\_, other \_\_\_\_\_ (*specify*)
- 6.02 Required phase spacing \_\_\_\_\_
- 6.03 Are there adjacent columns or structures, which extend vertically above the mounting truss? \_\_\_\_\_ (*yes or no*). Distance from nearest switch base to adjacent column \_\_\_\_\_
- 6.04 Switch base mounting height above grade \_\_\_\_\_
- 6.05 Structure drawing available \_\_\_\_\_ (*yes or no*); substation layout or plan drawing available \_\_\_\_\_ (*yes or no*); sketch of general arrangement available \_\_\_\_\_ (*yes or no*)
- 6.06 Mechanical or electrical clearance issues \_\_\_\_\_ (*yes or no*)

### 7.00 Pole Structure (Line Applications)

- 7.01 Mounting structure will be wood pole \_\_\_\_\_, steel pole \_\_\_\_\_, concrete pole \_\_\_\_\_, laminated wood pole \_\_\_\_\_, lattice tower \_\_\_\_\_, other \_\_\_\_\_ (*specify*)
- 7.02 Structure to be single pole \_\_\_\_\_, two pole \_\_\_\_\_, three pole \_\_\_\_\_, four pole H-frame \_\_\_\_\_, or other \_\_\_\_\_ (*specify*) mounting configuration
- 7.03 Will the pole extend vertically above the truss or wood cross arms \_\_\_\_\_ (*yes or no*)?
- 7.04 Will there be a shield wire \_\_\_\_\_ (*yes or no*)?
- 7.05 Switch to be mounted on wood cross arms \_\_\_\_\_, metal truss \_\_\_\_\_, other \_\_\_\_\_ (*specify*)
- 7.06 If metal truss, it will be supplied by customer \_\_\_\_\_, SEECO \_\_\_\_\_
- 7.07 If wood cross arms, centerline spacing of the beams is \_\_\_\_\_ (*specify*)



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- 7.08 Required phase spacing \_\_\_\_\_, vertical distance grade to truss or cross-arm \_\_\_\_\_, vertical distance grade to top of pole \_\_\_\_\_
- 7.09 Structure drawing available \_\_\_\_\_ (yes or no); guying plan available \_\_\_\_\_ (yes or no); sketch of general arrangement available \_\_\_\_\_ (yes or no)

### 8.00 Line Tensions and Angles (Line Applications)

- 8.01 Conductor type, size, and tensions:  
Line 1: type \_\_\_\_\_, size \_\_\_\_\_, maximum tension \_\_\_\_\_ lbs  
Line 2: type \_\_\_\_\_, size \_\_\_\_\_, maximum tension \_\_\_\_\_ lbs  
Line 3: type \_\_\_\_\_, size \_\_\_\_\_, maximum tension \_\_\_\_\_ lbs
- 8.02 Angular pull-off:  
Line 1: horizontal angle \_\_\_\_\_ degrees, vertical angle \_\_\_\_\_ degrees  
Line 2: horizontal angle \_\_\_\_\_ degrees, vertical angle \_\_\_\_\_ degrees  
Line 3: horizontal angle \_\_\_\_\_ degrees, vertical angle \_\_\_\_\_ degrees
- 8.03 Lines will dead-end to switch bases \_\_\_\_\_, truss/cross-arms \_\_\_\_\_, pole structure \_\_\_\_\_

### 9.00 Operating Environment

- 9.01 Proposed geographical location of switch is \_\_\_\_\_
- 9.02 Geographical location of switch is considered NESC light \_\_\_\_\_, medium \_\_\_\_\_, heavy \_\_\_\_\_
- 9.03 Altitude of switch will be \_\_\_\_\_ feet above sea level
- 9.04 Seasonal temperature extremes will vary from \_\_\_\_\_ degrees F to \_\_\_\_\_ degrees F
- 9.05 Switches will be \_\_\_\_\_, will not be \_\_\_\_\_ subject to heavy airborne particulate
- 9.06 Switches will be \_\_\_\_\_, will not be \_\_\_\_\_ subject to a salt-laden environment

### 10.00 Optional Features

- 10.01 Motor operators shall be \_\_\_\_\_, shall not be \_\_\_\_\_ furnished; if motor operators are to be furnished, please complete separate order specification for motor operators
- 10.02 Worm gear mechanisms shall be \_\_\_\_\_, shall not be \_\_\_\_\_ furnished; number of mechanisms required \_\_\_\_\_ and required gear ratio \_\_\_\_\_ (*Specify 20:1, 30:1, or 40:1*)
- 10.03 Operator grounding platforms shall be \_\_\_\_\_, shall not be \_\_\_\_\_ furnished; if yes, please specify the required quantity \_\_\_\_\_
- 10.04 Fiberglass or porcelain insulating member in control column shall be \_\_\_\_\_, shall not be \_\_\_\_\_ furnished



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- 10.05 Auxiliary switches shall be \_\_\_\_\_, shall not be \_\_\_\_\_ furnished; number of switches required \_\_\_\_\_ and required contacts (form "c") per switch \_\_\_\_\_
- 10.06 Ground switches shall be \_\_\_\_\_, shall not be \_\_\_\_\_ furnished; if ground switches are to be furnished, please complete separate order specification for ground switches
- 10.07 Interlocks shall be \_\_\_\_\_, shall not be \_\_\_\_\_ furnished; interlocks to be key \_\_\_\_\_, mechanical \_\_\_\_\_, electrical \_\_\_\_\_; please specify the required quantity \_\_\_\_\_
- 10.08 Tin-plated terminal pads shall be \_\_\_\_\_, shall not be \_\_\_\_\_ furnished
- 10.09 Terminal connectors shall be \_\_\_\_\_, shall not be \_\_\_\_\_ furnished