MSOD/T Series

Motor Switch Operator For Reciprocating (⇧⇩) Switches

Purchasing Specification

Description:

Pole mounted 24 VDC reciprocating (⇧⇩) output motorized switch operator for 4 kV- 138 kV overhead gang operated air break switches. This equipment shall meet or exceed all applicable A.N.S.I./I.E.E.E., F.C.C. , S.A.M.A. and I.E.C. test standards.

General specifications:

1. Operating stroke must be a fourteen inch (14½") nominal and fully operate the switch open or closed within 0.5-0.7 seconds. A sealed DC motor capable of 5,000 lb. stall torque coupled with a multi disk clutch shall provide the output to the switch control rod.
2. Stroke limits (once set) should not require re-setting after manual operation or motor running maintenance.
3. Operator linkage must toggle over center at both extremes of the stroke to: 1) place control rod compression on a mechanical stop in the closed position and 2) prevent accidental movement from the open position.
4. Switch position status must be indicated locally on the control panel and transmitted via SCADA remotely when in either local/manual or remote/motor operating mode.
5. Single point lifting is to be provided on a powder coated welded stainless steel enclosure with stainless steel hardware and safety handle.
6. A visible air gap must be attainable between the control rod and output shaft of the motor operator in the open position. No adjustments shall be required to re-engage the operator and the control rod. The switch position must be lockable during a clearance.[1]
7. It shall not be necessary to disengage the control rod to perform a manual operation of the switch.
8. The manual handle shall require the use of an interlocking device which, when removed for use with the manual handle, shall break the electrical circuit to the motor.[1]

Control and SCADA Specifications:

1. The operator shall have a control panel with the following controls and status indications:
   - Switch Open/Close Pushbutton and LED Status Indication
   - Battery Test/Reset Toggle Switch Control
   - Low Battery Motor Lock-out Lamp
   - Power Supply "ON" Lamp
   - Remote/Local Toggle Switch
   - Motor Decoupled Lamp[1]
   - Motor Circuit Interlock Pin Removed Lamp
   - Operations Counter
   - Door Sensor
   - Motor Interlock Pin[1]
   - Decoupling Handle[1]
   - 120 VAC, 6 Amp Convenience Receptacle
   - Lamp Test Push Button
2. The operator electronic controls shall have the following minimum features:
   - 12-pin analog input plug
   - 120 VAC regulated heater
   - Removable battery pack
   - Weather-tight panel separating mechanical output linkage mechanisms.
   - Removable control logic, RTU, and communications module with the following features:
     - Battery monitoring and automatic timed test
     - Low voltage motor lockout
     - Low voltage system disconnect
     - All status and control outputs shall be connected to a test terminal block.
     - DC startup test pushbutton
     - Fused 120 VAC input, and 24 VDC power supply
     - Minimum control points including:
       Open/Close Switch
       Battery Test/Reset
     - Minimum digital status outputs including:
       Switch Open/Closed
       Low Battery Lock-out
       Power supply Failure
       Local/Remote Control
       Operator Decoupled
       Interlock Pin Removed
     - Minimum analog outputs including:
       Six analog outputs shall be provided to interface with line post, or other sensors.
       Fused 24 VDC and 12 VDC outputs for the radio, RTU or other equipment .

[1] User Safety Point.