Motor Operators & Automated Overhead Switches

Catalog 14C November 2023

HUBBELL

FlexMO Motor Operator for Automation Ready (AR) Distribution Switches

For detailed information on the AR Switch, refer to Catalog Section 14A.

HPS offers solutions to your Distribution Automation requirements

General Description

With the standard FlexMO Motor Operator, for switches with down-the-pole rotating controls, the motor, and all operating controls are in either an aluminum or Stainless Steel enclosure that easily mounts to the pole and the switch.

With the crossarm mounted OTS Motor Operator, the motor is mounted on the crossarm and the controller, RTU, radio, etc. is in a separate enclosure that mounts below the switch. HPS offers our FTU which is an RTU specific for the FlexMO for SCADA connectivity. The OTS Motor Operator is currently offered on Horizontal Configured AR units only.

Operation

FlexMO Motor Operators can be operated locally or remotely.

Manual Operation

The FlexMO motor operators can be decoupled for manual operation.

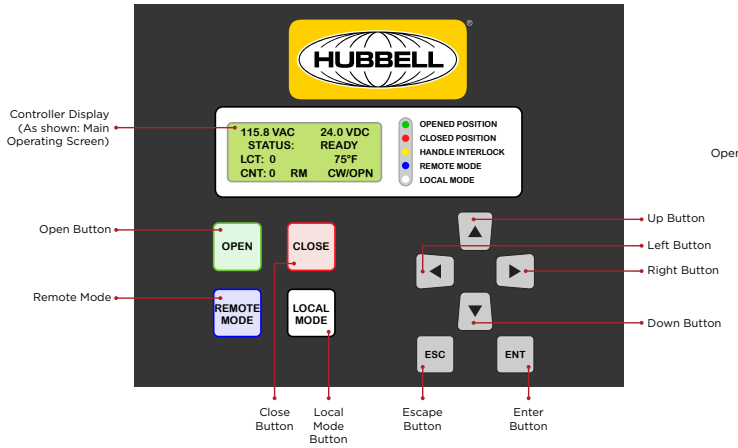
Speed Variability Control

All FlexMO motor operators can operate at 5 different speeds and can be programmed to operate in 2-speed mode. The fast speeds allow the operator to open and close the AR switches in 0.4 seconds.

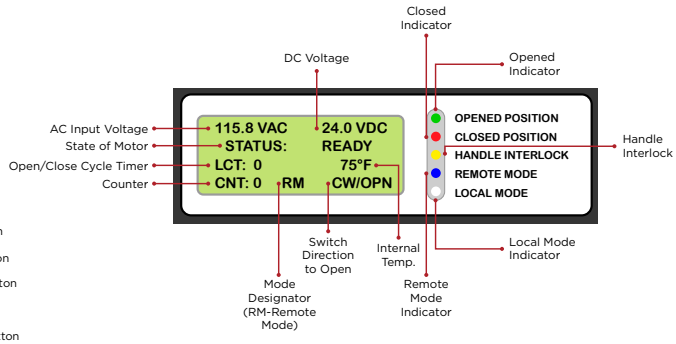
Ratings

- Operating Torque: up to 20,000 in-lbs
- Operating Voltages: 24, 48, and l25 VDC, l20 VAC, and 240 VAC
- Operating Speed: Programmable
- Cabinets: Powder Coated Galvanized Steel (NEMA 3R), Aluminum (NEMA 3R), and Stainless Steel (NEMA 4X)

FlexMO Nomenclature



FlexMO motor operator



Close-up of controller display

FlexMO solid state motor operators for both torsional down-the-pole controls and crossarm mounting

Standard Features

- Variable Speed Control
- Adjustable Auxiliary Relays (up to l2)
- Open/Close Push Button
- Local-Remote Push Buttons
- LED Indicating Lights
- LED Cabinet light
- Fully Adjustable Thermostatically controlled heater (F or C)
- De-coupler for vertical operating pipe
- 3 types of motor overload protection
- Circuit Breaker protection of motor/control and heater
- Dynamic Brake
- Manual hand crank
- Swing Handle
- Motor lockout when hand crank inserted
- Programmable operation delay—open or close

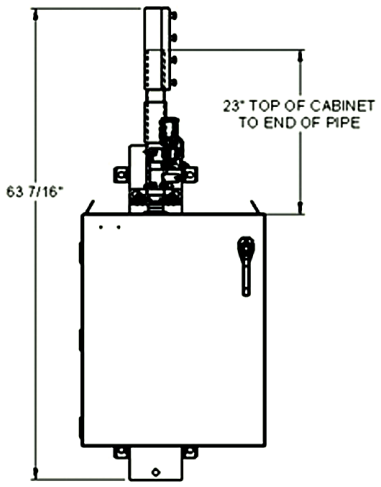
Standard Status Updates

- Open/Close Status
- Circuit Breaker Status
- Local/Remote Status
- Locked Rotor Status
- Loss of A/C Status
- Loss of DC Status
- Door Alarm
- External Interlock Contact
- D/C Operation Lockout - Bad D/C
- A/C Alarm (High/Low)

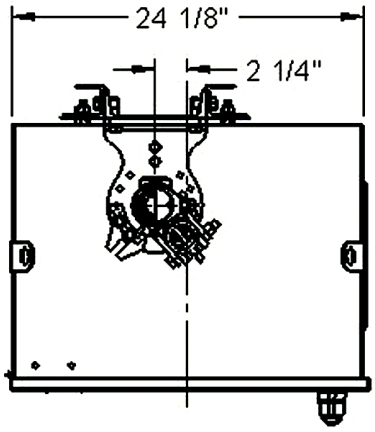
Optional Features

- Battery Monitoring
- Pre-wired RTU Harness
- SCADA Communication Capability
- Pre-Wired Radio Harness
- Customer specified RTU
- Customer specified Communications
- Battery Backup (24 VDC)
- A/C Auto Switch Open (time delayed)
- A/C Voltage Meter
- D/C Alarm (High/Low)
- D/C Voltage Meter
- Electronic position sensing
- Lockable in Remote “only”
- Lockable in Local “only”
- Software Selectable Switch Rotation
- Solid State Switching
- Removable doors
- Vented Cabinet
- GFI Outlet
- Operations Counter—locked or resettable
- Din Rail Terminal Block

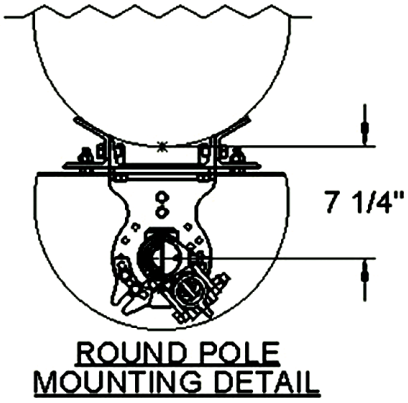
FlexMO Motor Operator Dimensional Data

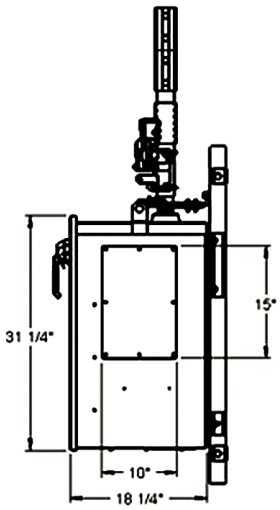


Front

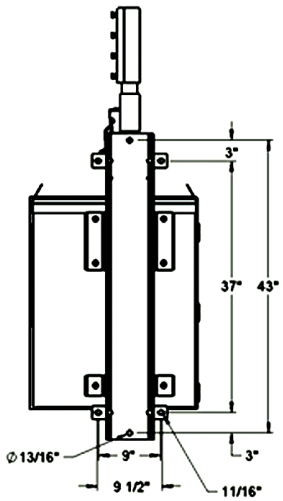


Top

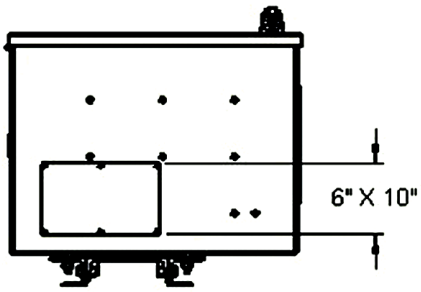




Side



Back



Bottom

Ratings

- Operating Torque: up to 20,000 in-lbs
- Operating Voltages: 24, 48, and l25 VDC, l20 VAC and 240 VAC
- Operating Speed: Programmable
- Cabinets: Powder Coated Galvanized Steel (NEMA 3R), Aluminum (NEMA 3R), and Stainless Steel (NEMA 4X)

FlexMO Terminal Unit (FTU)

Remote Terminal Unit for the FlexMO Motor Operator.

Custom made Remote Terminal Unit (RTU) designed specifically for the FlexMO® motor operator and with the capability to transmit all available information to a SCADA Control Station

The FlexMO motor operator supports remote operation via remote terminal units capable of communicating to a SCADA network. However, non-Hubbell RTUs lack the capability, without additional design costs/considerations, to transmit all FLEXMO TERMINAL UNIT (FTU) information (inputs/outputs) that the FlexMO motor operator offers. It communicates with the SCADA system via DNP3 protocol and converts commands into FlexMO motor operator commands to send and retrieve data from the FlexMO controller.

The FTU communicates with the FlexMO motor operator via a three-wire cable and maintains an internal database including the latest information about the status of the motor operator.

This communication (polling cycle) between the FTU and the motor operator repeats if the cable is connected. This enables the FTU to provide the latest information whenever the SCADA master polls for data. An Event is defined as any change in the position of the connected switch or a change in any value above the configured threshold (Ex: An increase in the enclosure temperature beyond a threshold).

Events are generated based on the data received from the FlexMO® motor operator and stored in the internal database of the FTU. The FTU accumulates the events in the database and sends them to the SCADA master when it sends a polling request. The events in the database are cleared once they are sent to the master and the FTU continues to collect data and store events for the next polling from the SCADA master.

Features and Benifits

- Minimal connections to FlexMO motor controller – easy single cable connection
- Maximizes status and control availability to mapping -- easy user interface point mapping
- Allows transfer of FlexMO internal data that cannot be mapped with third part RTUs

Motor Operator for Gang-Operated Distribution Switches

For detailed information on the AR Switch, refer to Catalog Section 14A.

Crossarm-Mounted OTS Motor Operator

Ordering Information

Complete automated switch package installations or add-on motor operators are based on factors including the application requirements, customer specified RTU and radio, voltage and current sensors, etc.

To determine the appropriate product for a given application requirement, contact your Hubbell Power Systems representative and fill in the form on pages 11 & 12.

Motor Operator for Gang-Operated Distribution Switches

For detailed information on the AR Switch, refer to Catalog Section 14A.

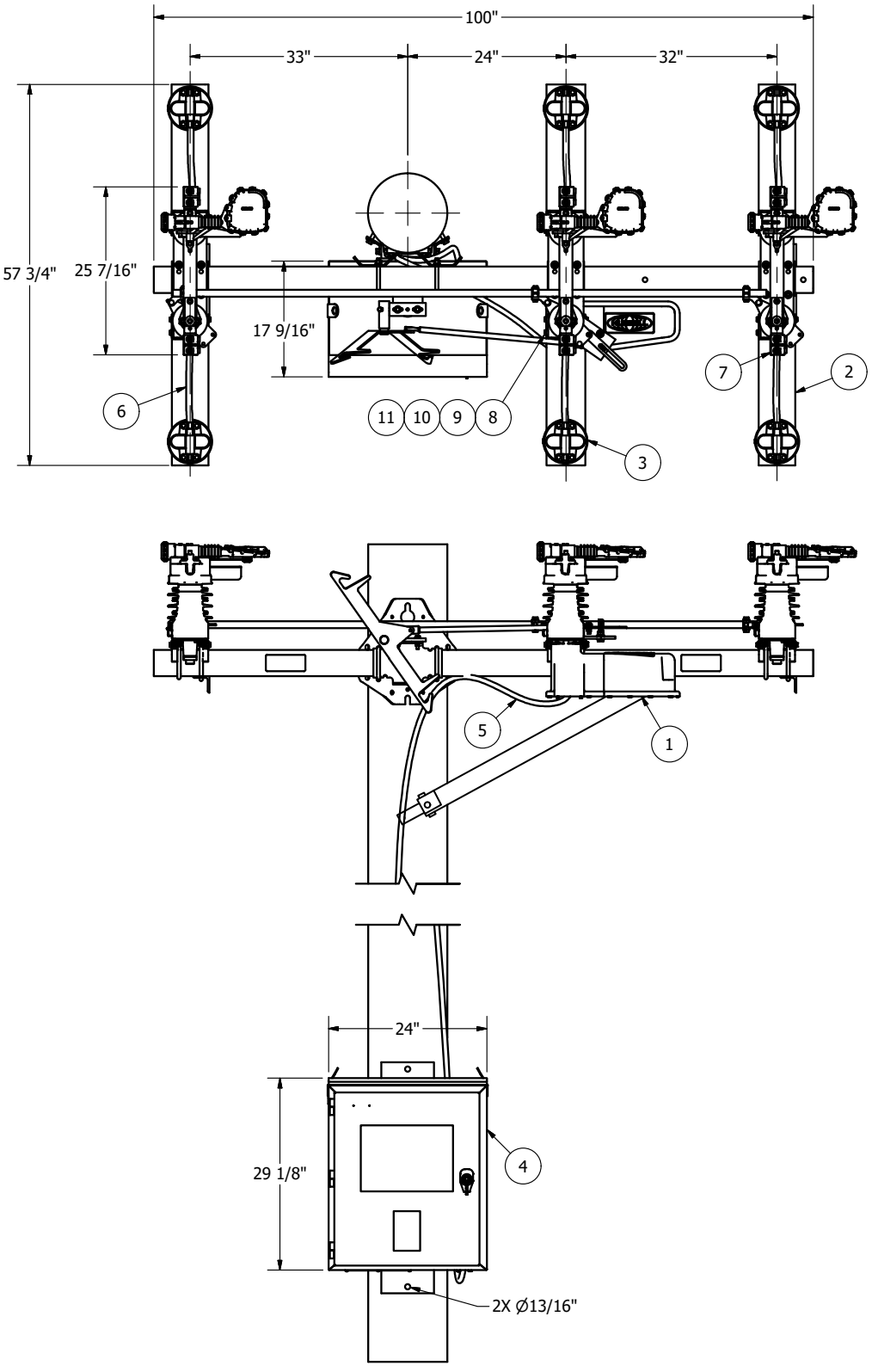
Standard Motor Operators for Down-the-Pole Controls

Ordering Information

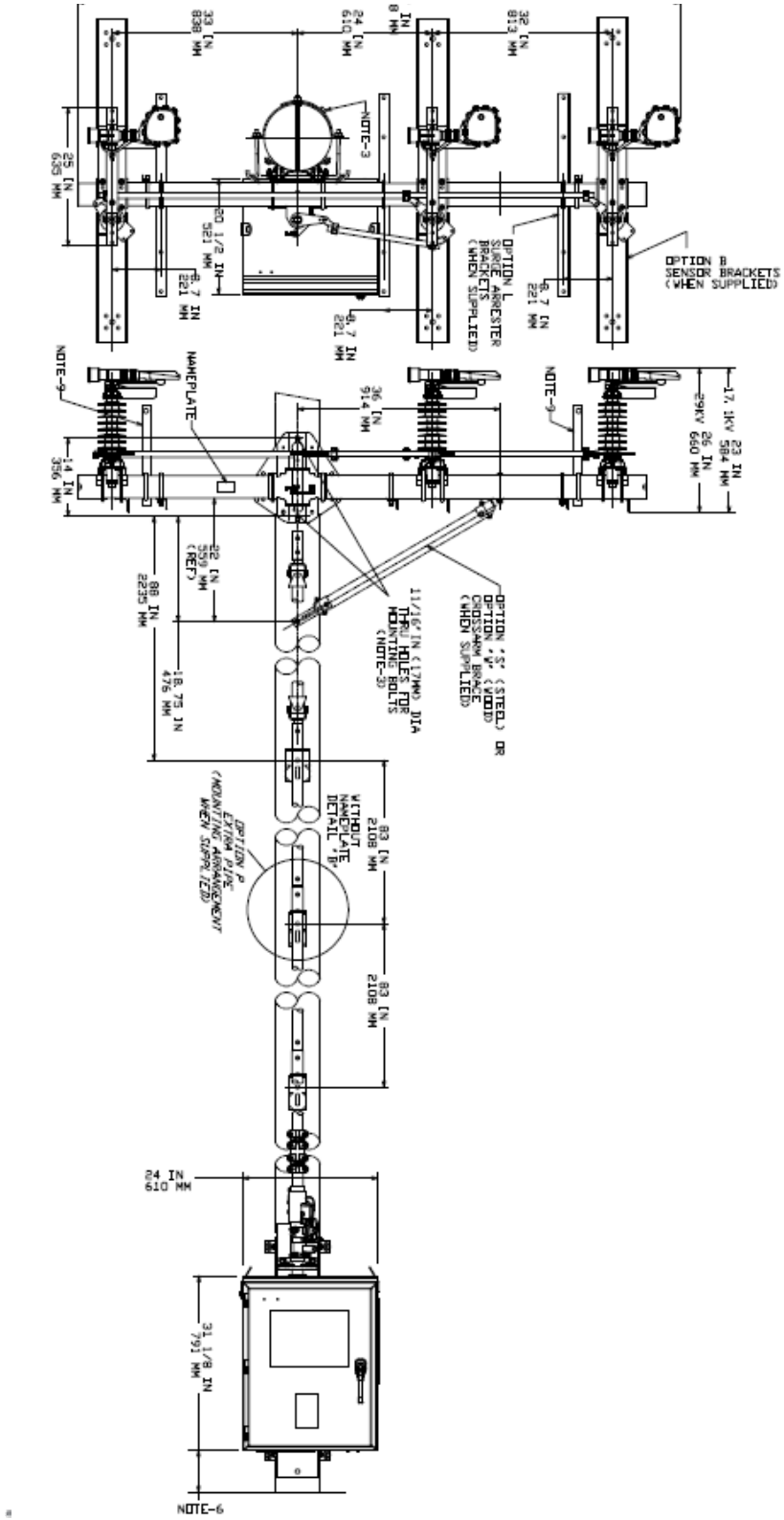
Complete automated switch package installations or add-on motor operators are based on factors including the application requirements, customer specified RTU and radio, voltage and current sensors, etc.

To determine the appropriate product for a given application requirement, contact your Hubbell Power Systems representative and fill in the form on pages 11 & 12.

OTS Motor Operator



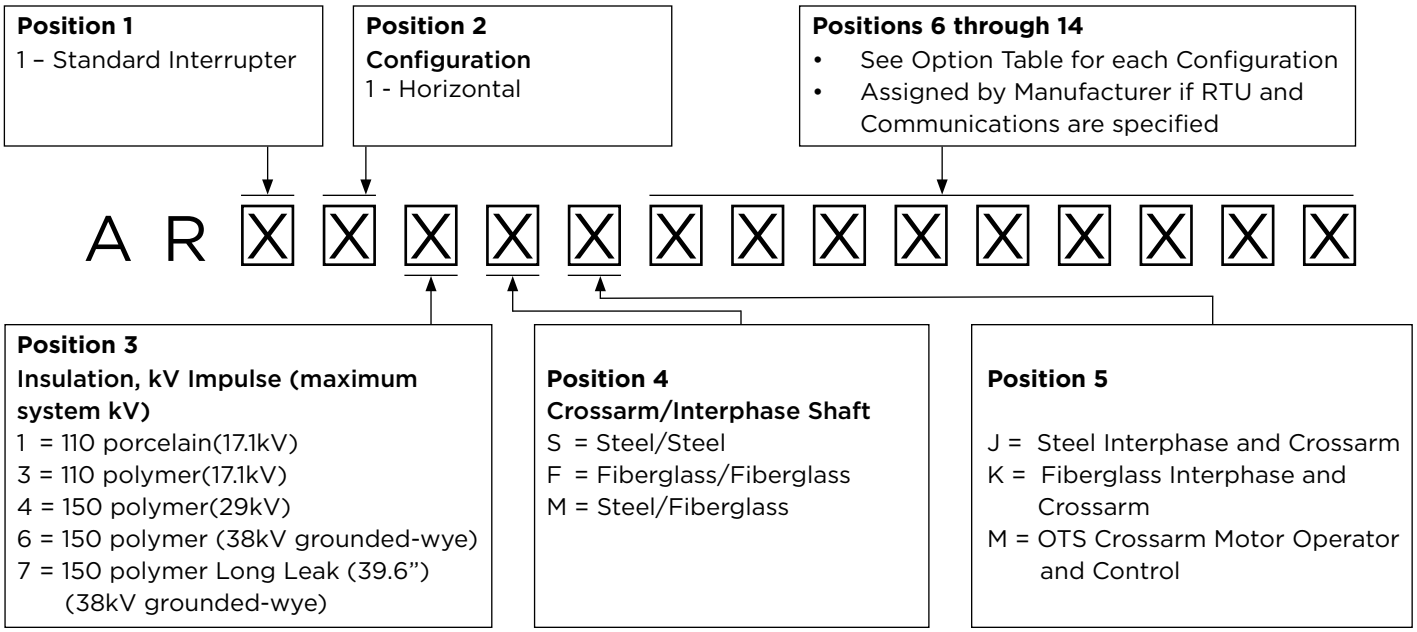
Standard Down-the-Pole Controls



Catalog Numbering System

For Automated AR Switches

15kV, 27kV or 34.5kV Grd-Wye ..... 900 Amperes Continuous/Interrupt



Options by Configuration

B = Sensor Brackets
C = Control Insulator
G = Terminal with Captive Hardware
† H = Captive Hardware
L = Surge Arrester Brackets
P = Extra Pipe
S = Steel Crossarm Brace, only one supplied
† T = Terminal Connectors (ATC 1343)
W = Wood Crossarm Brace, only one supplied
X = Extension Links

† Options H and T, Captive Hardware, and Terminal Connectors cannot be ordered together.

Automated AR Inquiry Form

To be completed by Sales Representative

Prepared by

Date

Purchaser

User

Contractor (if applicable)

Automation contact

Contractor phone no.

Required delivery date

Remote Terminal Unit (RTU)

Installed by:

☐ HPS ☐ Customer ☐ Provisions only

Purchased by:

☐ HPS ☐ Customer

Model/Part No.

Manufacturer contact

Number of RTU analog inputs

Type of master station

Modem: ☐ No ☐ Yes Baud rate:

RTU Protocol

Literature ship to address

Sensors

No. of currents

Primary/secondary current

No. of voltages

Primary/secondary voltage

Sensor cable length

Manufacturer

Communications Device

Communications device provided by:

☐ HPS ☐ Customer ☐ None

Antenna purchased by:

☐ HPS ☐ Customer ☐ Provisions only

Manufacturer

Manufacturer part/model

Manufacturer contact

Phone no.

Type:

☐ Land line ☐ Fiber optics ☐ Radio ☐ Other (specify)

Antenna purchased by:

☐ HPS ☐ Customer

Antenna manufacturer/model

Automated AR Inquiry Form

System Information

Operating system voltage

BIL required

Normal load current

Max. available fault current

Solidly grounded system

☐ Yes ☐ No

Local AC available:

☐ 120 ☐ 240

Switch Information - New Installation

Catalog Number

Voltage

☐ 15 kV ☐ 25 kV ☐ 35 kV

Crossarm:

☐ Steel ☐ Fiberglass

Control:

☐ Down-the-pole ☐ On-the-switch

Configuration:

☐ Horizontal ☐ Delta

Additional Options:

☐ Sensor Brackets ☐ Control Insulator ☐ Captive Hardware ☐ Surge Arrester Brackets

☐ Extra Control Pipe ☐ Crossarm Brace ☐ Extension Links

Switch Information - Retrofit

Manufacturer

Model

Voltage

☐ 15 kV ☐ 25 kV ☐ 35 kV

Control:

☐ Down-the-pole ☐ Hook stick

Configuration:

☐ Horizontal

Pole:

☐ Wood ☐ Other (drawings required)

NOTES

HUBBELL®
Power Systems

• 8100 Churchill Avenue • Leeds, Alabama 35094 • (205) 699-0840

NOTICE: For the latest revision of our Catalog and Literature, click here or visit our web site: *www.hubellpowersystems.com*

NEVER COMPROMISE™

www.hubbellpowersystems.com

CA10231E 11/2023