

# AUTO RECLOSER

- Unique Single-box Solution
- Package consists of:
  - 3-Pole Gang-operated, Vacuum Circuit Breaker Epoxy Resin Cast, Bushing Embedded,
  - Current Transformer Integral Control Panel
  - Breaker Control Unit Numerical Relay
  - Tri-vector Metering (Optional)
  - Lightning Arrestor (Optional)
  - Magnetic Actuator Operating Mechanism 20,000 Mechanical Operations
  - Maintenance-free
  - Hydrophobic Cyclo-aliphatic (HCEP) Bushings
  - Epoxy Resin Cast
  - Terminal Connector to suit OH Conductor/
  - Cable Termination
  - Mechanical Trip/Lock-out facility
  - Truly space-saving
  - Suitable for tough outdoor environment
  - Suitable for Single-pole or Double-pole or Structure mounting
  - Reduced Installation Time
  - Long Electrical & Mechanical Life Suitable for frequent switching
  - Suitable for unmanned sub-stations/locations
  - Suitable for Urban/Rural Power Distribution
  - Suitable for Primary/Secondary Power Distribution
  - Less Downtime
  - Reduced Lifecycle cost
  - Reduced Total Cost of Ownership
  - Increased Availability
  - Increased Revenue
  - Hazards of Oil-filled CTs avoided

- Suitable for multi-shot rapid auto-reclosing
- Can be used as a Sectionalizer
- Can be used as a Feeder Breaker
- SCADA/DMS compatible

## **SALIENT FEATURES**

- Unique Single-box Solution
- Package consists of:
  - o 3 pole, gang operated Vacuum Auto Recloser
  - o Bushing Embedded Epoxy Resin Cast, Dry Type, Current Transformers
  - o Integral Control Cabinet
  - o PMA Controller
  - o In-built battery & battery charger
- Permanent Magnetic Actuator (PMA)
- Operating Mechanism  
20, 000
- Mechanical Operations
- Maintenance-free
- Hydrophobic Cycloaliphatic Epoxy (HCEP)
- Resin Bushings Terminal Connector to suit Overhead Conductor/Cable
- Mechanical Trip & Lock-out facility
- Truly space-saving
- Suitable for rigorous outdoor environment
- Suitable for Single-pole or Double-pole or Structure mounting
- Reduced Installation Time
- Long Electrical & Mechanical Life
- Suitable for frequent switching
- Suitable for unmanned sub-stations/locations
- Suitable for Urban/Rural Power Distribution

- Suitable for Primary/Secondary Power Distribution
- Less Downtime
- Reduced Lifecycle cost
- Reduced Total Cost of Ownership
- Increased Availability
- Increased Revenue
- Hazards of Oil-filled CTs avoided
- Suitable for multi-shot rapid auto-reclosing
- Can be used as a Sectionalizer
- Can be used as a Feeder Breaker
- SCADA/DMS compatible

## **PROTECTED FEATURES**

- 3 stage Overcurrent Protection (Directional/Non- Directional)
- Fast & Delayed Trip Curves for Phase Fault/EarthFault
- 50 types of Trip Curves (IEC, ANSI, Recloser Curves, Customized Curves)
- Definite Time Element
- Negative Sequence Overcurrent Protection
- Sensitive Earthfault (SEF) Protection
- Cold Load Pick-up (CLPU) Protection
- Inrush Restraint Element
- Sequence Coordination
- Broken Conductor Protection
- Check Synchronizing Element
- Auto Reclosing (5 shots)
- 4 setting groups
- Automatic Setting Group Change depending upon power flow direction

## **CONTROL FUNCTIONS**

- Local/Remote
- Open/Close
- Recloser ON/OFF
- Protection ON/OFF
- Earth Fault Protection ON/OFF
- Reset
- Battery Test

## **STATUS INDICATIONS**

- Recloser Status: ON/OFF
- Control Position: Local/Remote
- Fault Indication (R, Y, B, N, SEF, Directional)
- Broken Conductor
- Synchronization Fail
- Hot Line
- Inrush Detected
- Mechanical Lock-out
- Loss of AC Aux. Power
- Control Cabinet Door Open
- Battery overcharged
- Battery Charger Error
- System Error (self-diagnosis)

## MEASUREMENT FUNCTIONS

- Source Side Voltage
- Load Side Voltage (Optional)
- Current
- Active Power (kW)
- Reactive Power (kVAr)
- Apparent Power (kVA)
- Active Energy (kWh)
- Reactive Energy (kVArh)
- Power Factor
- Frequency
- Phase Angle
- Harmonics (upto 32nd)
- Total Harmonic Distortion (THD)

## COUNTER

- FRTU Restart Counter
- Recloser Trip Counter
- Fault Counter (R, Y, B, N, Total)

## REORDER

- Over 20,000 event records
- Waveform Record
- Fault Recorder (upto 4 faults)
- Maximum Demand-current
- Maximum Demand-power

## **CONTROL FUNCTIONS**

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## **OPTIONAL ACCESSORIES**

- Integral Earth Switch
- Earthing Truck–cable Side
- Earthing Truck–bus Side
- Fixed PT or Draw-out PT
- Rear mounted Draw-out PT
- Top mounted Draw-out PT
- Sealable CT/PT Chamber
- Sealable Metering Chamber
- Tariff Metering
- VCB handling Trolley (for Cassette Type VCBs)
- Metallic Safety Shutters
- Live Line Indicators
- Rear (Cable Chamber) Cover Interlocks
- Bus Chamber Cover Interlocks
- Remote Control Panel
- Remote Annunciation Panel

# APPLICATION

- Utilities
- Incomers
- Bus Couplers
- Outgoing Feeders
- Residential Complex
- Commercial Complex
- Shopping Malls
- Hotels
- Hospitals
- Industries
- Power Plants
- Solar Power Plants
- Unitised Sub Stations
- EB Metering Panels
- Transformers
- Motors
- Reactors
- Capacitors
- Cable Feeders
- Overhead Feeders
- Line Feeders

## Guaranteed Technical Particulars

<b>PARAMETER</b>	<b>12kV</b>	<b>36kV</b>
<b>Rated Voltage (kV)</b>	12	36
<b>Rater Frequency (Hz.)</b>	50/60	50/60
<b>Rated One Minute Power Frequency Withstand Voltage (Wet) (kV)</b>	28	70

<b>PARAMETER</b>	<b>12kV</b>	<b>36kV</b>
<b>Rated Lightning Impulse Withstand Voltage (1.2/50<math>\mu</math>s) (kVp)</b>	75	170
<b>Rated Current (A)</b>	800	800
<b>Rated Short Circuit Breaking Capacity (kA)</b>	20	20
<b>Rated Short Circuit Making Capacity (kAp)</b>	50	50
<b>Rated Short Time Withstand Current for 3Sec. (kA)</b>	20	20
<b>Rated Operating Sequence</b>	O-500ms-CO-2s-CO-5s-CO	
<b>Closing Time</b>	< 65ms	
<b>Opening Time</b>	< 45ms	
<b>Mechanical Life</b>	20000 Operations	
<b>Electrical Life at Rated Current</b>	20000 Operations	
<b>Electrical Life at 100% Short Circuit Breaking Capacity</b>	100 Operations	
<b>Auxiliary Contact</b>	4 N.O. + 4 N.C.	
<b>Interrupting Medium</b>	Vacuum	
<b>Insulation Medium</b>	Solid Dielectric	
<b>Operating Mechanism</b>	Permanent Magnetic Actuator	
<b>Degree of Protection (Switching Unit)</b>	IP 65	
<b>Degree of Protection (Control Cabinet)</b>	IP 65	
<b>Standard</b>	IS/IEC 62271-111	