

# 3-PHASE TO 2-PHASE/1-PHASE GANG OPERATED VCB SELECTOR

- The VCB Selector Switch consists of 2 Nos. of gang-operated, 3 pole Auto Recloser type VCBs
- One gang operated VCB will switch ON for extending 3-phase supply and the other gang operated VCB will Switch ON for extending 2 phase/1-Phase supply.
- The two outgoing lines which are to be extended the same phase supply during 2 phase/1-Phase feed shall be mechanically linked at the incoming side of the 2-phase/1 Phase feed VCB.
- Mechanical and electrical interlocks are provided between the two VCBs, to prevent simultaneous closing of both the VCBs.
- However, it is possible to keep both the VCBS OFF at the same time.
- The VCB Selector Switch will be operated On-load
- The operating mechanism is magnetic actuator
- Compact and light-weight
- Robust construction
- Suitable for Outdoor Duty, protected to Degree of Protection IP55.
- It is possible to install the VCB Selector Switch in an existing Pole/Structure

## 3-Phase to 1-Phase Gang Operated VCB Selector

- The VCB Selector Switch will be electrically operated, with a provision for manual tripping
- The insulation medium is solid dielectric & the interruption medium is vacuum
- SCADA/DMS compatible
- Mechanical and electrical ON/OFF indications
- The control cabinet suitable for outdoor duty, with IP55 degree of protection, and of light weight and is suitable for Pole/Structure mounting
- The Incoming as well as Outgoing Bushings of the VCB Selector Switch are of universal type, suitable for terminating ACSR OH Conductor or Aluminium/Copper Cable
- The VCB Selector Switch has an in-built comprehensive Protection Unit, with a set of suitably rated integral Current Transformers, embedded in the VCB bushings.
- Flexible Protection Options – from basic Overcurrent & Earthfault Relay to comprehensive Feeder Manager
- Optional Metering – from basic ammeter to comprehensive communicable multi-function meter

## SALIENT FEATURES

- Mechanical and electrical interlocks are provided between the two VCBs, to prevent simultaneous closing of both the VCBs.
  - However, it is possible to keep both the VCBs OFF at the same time.
  - The VCB Selector Switch will be operated On-load.
  - The operating mechanism is magnetic actuator

- Compact and light-weight
- Robust Construction
- Suitable for Outdoor Duty, protected to Degree of Protection IP65.
- It is possible to install the VCB Selector Switch in an existing Pole/Structure
- The VCB Selector Switch will be electrically operated, with a provision for manual tripping
- The insulation medium is solid dielectric & the in-terruption medium is vacuum
- SCADA/DMS compatible
- Mechanical and electrical ON/OFF indications
- The control cabinet suitable for outdoor duty, with IP55 degree of protection, and of light weight and is suitable for Pole/Structure mounting
- The Incoming as well as Outgoing Bushings of the VCB Selector Switch are of universal type, suitable for terminating ACSR OH Conductor or Aluminium/Copper Cable
- The VCB Selector Switch has an in-built comprehensive Protection Unit, with a set of suitably rated integral Current Transformers, embedded in the VCB bushings.
- Flexible Protection Options-from basic Over-current & Earthfault Relay to comprehensive Feeder Manager
- Optional Metering-from basic ammeter to comprehensive communicable multi-function meter

## **PRINCIPLE OF OPERATION**

- The Twin Feeder VCB cum 3-Phase to 1-Phase Changeover unit consists of two numbers of gang-operated, three pole Auto Re-closer type VCBs.
- One gang operated VCB will switch ON for extending 3-phase supply and

the other gang operated VCB will Switch ON for extending 1-Phase supply.

- Whenever generation is good, or in any duration of the day-say from 7AM to 6PM-three Phase Supply can be extended to the agricultural feeders.
- Whenever generation reduces or there is any voltage drop in the distribution grid or in any given duration of day/night-say, between 6PM to 7AM-1-Phase Supply can be extended to the agricultural feeders.
- This will ensure that three phase agricultural loads can be operated only when there is sufficient power availability in the grid.
- When power scarcity is there, three phase power supply to agricultural feeders is automatically/manually cut-off, so that large three phase agricultural loads cannot be operated during such times.
- But, at the same time single phase domestic consumers connected to these agricultural feeders are not affected, as single-phase supply is extended to all the three lines, even during such power scarcity times.
- All such change-over from 3-Phase supply to 1-Phase supply and vice versa can be monitored and controlled. thro select mobile phones.
- All the events, settings, meter readings, status, etc. can also be viewed at any time in the select mobile phones.
- All the operations, monitoring and control can also be effected from SCADA/DMS

## Guaranteed Technical Particulars

PARAMETER	12kV	24kV
<b>Rated Voltage (kV)</b>	12	24
<b>Rated Frequency (Hz.)</b>	50/60	50/60

<b>PARAMETER</b>	<b>12kV</b>	<b>24kV</b>
<b>Rated Current (A)</b>	1250	1250
<b>Rated Insulation Level (kV)</b>	12/28/75	24/50/125
<b>Rated Short Time Withstand Current for 3Sec. (kA)</b>	26.3	26.3
<b>Rated Short Circuit Breaking Capacity (kA)</b>	26.3	26.3
<b>Rated Short Circuit Making Capacity (kAp)</b>	65.75	65.75
<b>Closing Time</b>	< 60ms	< 60ms
<b>Opening Time</b>	< 40ms	< 40ms
<b>Rated Operating Sequence</b>	0-300ms-CO-3 min.-CO	0-300ms-CO-3 min.-CO
<b>Rated Mechanical Life</b>	20000 Operations	20000 Operations
<b>Rated Electrical Life at Rated Current</b>	20000 Operations	20000 Operations
<b>Rated Electrical Life at Rated Short Circuit Breaking Current</b>	100 operations	100 operations
<b>Type of Operating Mechanism</b>	Magnetic Actuator	Magnetic Actuator
<b>IP Grade of Switching Unit</b>	IP65	IP65
<b>IP Grade of Control Cabinet</b>	IP65	IP65
<b>ON/OFF Indication</b>	Both Mechanical & Electrical	Both Mechanical & Electrical
<b>Applicable Standard</b>	IS/IEC 62271-100 & IS/IEC 60529	IS/IEC 62271-100 & IS/IEC 60529
<b>Auxiliary Voltage</b>	24V DC & 230V AC	24V DC & 230V AC
<b>Auxiliary Voltage Tolerance</b>	85% to 110%	85% to 110%
<b>Manual Trlp Operation</b>	Possible	Possible
<b>Type of Insulation</b>	Solid Dielectric	Solid Dielectric

<b>PARAMETER</b>	<b>12kV</b>	<b>24kV</b>
<b>Aux. Contacts</b>	4 N.O. + 4 N.C. in each of the 2 positions	4 N.O. + 4 N.C. in each of the 2 positions
<b>SCADA Compatible</b>	YES	YES