

ABB AutoLink Three-Phase Electronic Sectionalizer

The new AutoLink three-phase electronic sectionalizer improves the network reliability and provides a greater flexibility to the medium voltage overhead lines. Just like the single-phase AutoLink, both the number of counts and the actuating current can be configured and reconfigured, according to the particular requirements of coordination. In addition, the three-phase opening prevents network unbalance. The three-phase AutoLink is a simple and economic solution for the three-phase lines sectionalizing.

Description

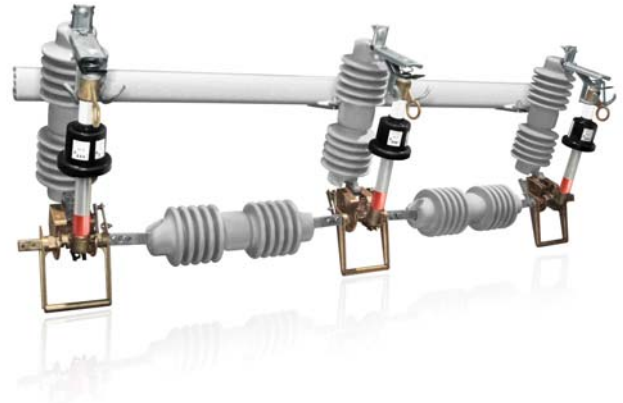
The device consists of a three-phase mechanically linked base, where three single-phase AutoLinks mount. Each AutoLink tube houses an electronic circuit that discriminates between permanent and temporary faults, thus granting immunity to inrush currents that could be generated in the system. The electronic circuit in each AutoLink determines the mechanical opening of the device if the fault current is determined to be continuous or permanent. As the three AutoLink tubes are mechanically linked, when one of them trips, the remaining two phases are activated by the linkage to drop open.

The setting module is placed under the upper contact of each AutoLink. Through this module, the operator can manually configure or reconfigure the actuating current and the number of counts to obtain the desired combination for the system protection. The setting of the three AutoLinks must be the same.

The three-phase AutoLink is placed in branches, downstream of a recloser (or recloser switch). When the value of the current is at least 10% above the preset actuating current, the AutoLink starts counting the opening operations of the recloser. Once it reaches the preset count (1 to 4 opening operations of the recloser), it cuts the circuit in the branch, while the recloser remains open. The circuit is restored by resetting the AutoLink of the phase or phases through which the fault occurred and then manually closing each AutoLink while the circuit is open.

Operation

If a temporary fault occurs, the upstream recloser opens, and the AutoLink or AutoLinks corresponding to the phases through which the fault current flows, counts an opening operation. Then the recloser closes, and as the fault is transitory, it is cleared. Thirty seconds later, if no fault events occur, the AutoLink resets the count to zero. Finally, both the upstream device and the three-phase AutoLink remains connected and the circuit in service.



If a permanent fault occurs, the continuous reclosing operations do not clear the fault. However, the three-phase AutoLink counts these operations and, when one or more AutoLinks reach the set count, the AutoLink opens the three-phase network.

Application

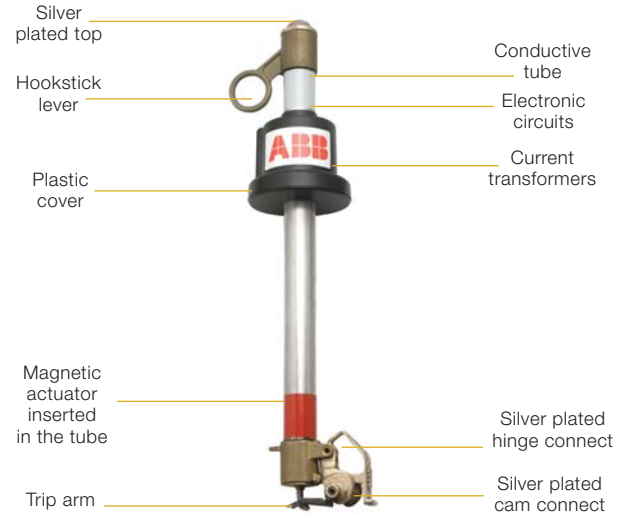
The ABB three-phase AutoLink coordinates perfectly with reclosers and recloser switches in medium voltage distribution networks, reducing the operating costs and the number of supply outages.

Additionally, one three-phase AutoLink can be installed in different places of network by simply setting the proper actuating current and number of counts.

The three-phase AutoLink can be installed in lines where single-phase opening is not desired and in systems with different grounding systems.

Three-phase AutoLink benefits

- Improves network reliability
- Isolates temporary faults preventing extensive outages
- Reduces operating costs
- 'One kV rating fits-all' design minimizes inventory
- Field configurable as many times as needed between 6 and 215 A, and from 1 to 4 counts
- Detects inrush current
- Trip arm reset with no tools require
- Does not require an auxiliary power source
- One simple pole mounting arrangement



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Technical Specifications

Model		AL32	AL34
Rated Voltage	kV	27	27
Rated power frequency wet withstand voltage (10 s)	kV	50	60
Rated power frequency dry withstand voltage (60 s)	kV	60	70
Insulation Level	kV BIL	125	150
Frequency	Hz	50 / 60	50 / 60
Nominal Current	A	200	200
Actuating Current	A	6 - 215	6 - 215
Number of counts before operation	#	1 - 4	1 - 4
Short time current, 1 s (rms value)	kA	4	4
Asymmetrical Initial (peak)	kA	10	10
Dead line detection	mA	< 200	< 200
Memory resetting time	sec	30	30
Maximum memory time with dead line	min	3,5	3,5

Applicable Standards

The AutoLink three-phase sectionalizer was designed and tested according to ANSI/IEEE C37.63 standard.

ABB S.A.

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