



AutoLink Frequently Asked Questions

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1 Background

1.1 What is the AutoLink Single Phase Electronic Sectionalizer?

The AutoLink Electronic Sectionalizer is a protection device that operates to isolate a permanent fault in the distribution line. It must be used together with an upstream recloser or substation breaker. The AutoLink is not a fuse tripping device, therefore it cannot be used as a protection device by itself.

1.2 What is the main function of the AutoLink?

The main function of the AutoLink is to discriminate between permanent and transient faults in the distribution line, giving the possibility to clear transient faults without permanent interruption to the customers.

1.3 Does the AutoLink replace a fuse?

The AutoLink fits into a standard fuse cutout and it directly replaces an existing fuse base. When it operates the AutoLink drops open like a fuse.

1.4 How does the AutoLink operate?

The AutoLink senses a current above the pickup threshold and zero current when the upstream recloser or substation breaker operates. If the fault is temporary it would be cleared by the reclose operation and the AutoLink reclose counter resets. If the fault is permanent the AutoLink will trip on the last open of the recloser, clearing the permanent fault in its branch, allowing the recloser to close prior to going to lockout.

1.5 How many reclose operations can the AutoLink see?

The AutoLink is user settable to detect 1 to 4 opening operations of the recloser.

1.6 What are the available pickup levels in the AutoLink?

The AutoLink is user settable to detect fault currents from 6A to 215A at 16 preset levels. Typical fuses have a current rating of up to 200A.

1.7 When does the AutoLink reset its counter?

The AutoLink reset time is 30 sec and it starts counting from each pickup or dead line detection condition.

1.8 What is the shortest open time?

The AutoLink minimum dead line detection time is 80 msec. If the dead line detection time is less than 80 msec, then the AutoLink will not advance its counter. For the AutoLink to operate it needs a minimum open time (reclose timer) of 500 msec. The 500 msec time is needed for the AutoLink to drop in the open position.

1.9 What is the longest open time?

The dead line condition (recloser open time) should be no longer than 3.5 minutes, for the AutoLink to have enough stored energy to trip.

1.10 How many models of AutoLink are available?

There are 3 models of AutoLink: 15kV, 27kV and 33kV. These 3 models have 3 different tube lengths, with exactly the same components to fit the respective standard cutout.

1.11 Where is the manufacturing located?

Manufacturing is at the ABB Argentina Medium Voltage Factory.

1.12 Where do I get support for the AutoLink?

AutoLink support for USA and Canada is available from ABB in Lake Mary, FL.
ABB Inc.

655 Century Point

Lake Mary, FL 32746

Phone: +1 407-732-2000 ext. 2510

+1 800-929-7947 ext. 5

Fax: +1 407-732-2029

email: customer.service.group@us.abb.com

www.abb.com/mediumvoltage

2 Technical features

2.1 What standard does the AutoLink comply with?

The AutoLink complies with ANSI C37.63 standard (IEEE Standard Requirements for Overhead, Pad-Mounted, Dry-Vault, and Submersible Automatic Line Sectionalizers for AC Systems up to 38kV).

2.2 What is the maximum pass-through current for the AutoLink?

The AutoLink is suitable for carry 4kA / 1 sec of short-circuit current and 10kA peak.

2.3 What type of faults does the AutoLink detect?

The AutoLink doesn't have curves. It detects any type of faults as long as the fault current exceeds the AutoLink pickup setting for half a cycle or longer.

2.4 What is the AutoLink life-span?

According to the ANSI C37.63 standard, the mechanical life must meet 200 operations and the AutoLink has been certified for 200 operations, as stated in the relative type test report.

2.5 Can the AutoLink be bench tested?

The AutoLink can be bench tested and a procedure is available for this purpose.

2.6 Does the AutoLink measure voltage?

The AutoLink doesn't have any voltage measuring or sensing, it measures current and uses it to power up.

2.7 When does the AutoLink know that the line is open?

The AutoLink detects a dead line when it measures 200mA or less. If more than 200mA are present when the current is interrupted, the AutoLink will not advance its counter.

2.8 Does the AutoLink detect transformer energization inrush currents?

The AutoLink detects and discriminates inrush currents thanks to a 2nd harmonic restraint algorithm. This allows the AutoLink not to pick up upon an inrush current in the distribution line and also being coordinated with the upstream recloser for this functionality.

2.9 What is the AutoLink Ingress Protection rating?

The AutoLink has been tested and rated to IP65.

3 Installation and Operation

3.1 Which cutout bodies are suitable for AutoLink installation?

AutoLink fits on ABB ICX, AB Chance, Delmar, Cooper, S&C, Lorenzetti and Delmar. For other brands, we recommend to send the cutout body to the factory, where the AutoLink can be tested in order to verify its mechanical operation.

3.2 What is the minimum load current required for the AutoLink to be operational?

The AutoLink requires 6A for at least 30 sec to charge up. A larger current will shorten the charge up time.

3.3 Are there spare parts available for the AutoLink?

Since AutoLink is a sealed device, there are no spare parts required for maintenance purposes, therefore the only components that may be replaced are the upper cap, O-ring, silicone grease, current and count labels.

3.4 Can the AutoLink be opened under load?

The AutoLink is not a fault-operation device. It doesn't have an arcing chamber or an extinguishing medium to prevent electrical arcing, therefore it is not designed or safe for the operator to open it under load. A load buster tool may be used to open the AutoLink under load.

The Load Break AutoLink provides an arcing chamber which allows safe load breaking with a standard hot stick.

3.5 Can the AutoLink be closed in an energized line?

The AutoLink is not a fault-operation device. It doesn't have an arcing chamber or an extinguishing medium to prevent electrical arcing, therefore it is not designed or safe for the operator to close it in an energized line.

The ANSI C37.63 standard has no recommendations regarding closing in live line conditions and therefore there are no tests or safe practices defined.

While a common practice in utilities is to close a fused cutout or an AutoLink in live line conditions, there is no way to run a test and certify that the closing operation can be done since the possibilities of speed, operator force, hot stick and environmental conditions vary from case to case.

ABB does not recommend to close the AutoLink in live line conditions as there is no protection for the operator and there is a possibility to be closing into a fault. The user should follow safe practices which do not put the operator at risk.

The arc chamber of the Load Break AutoLink was only designed for opening under load conditions and not for closing into a live line.

3.6 What are the recommendations for setting the AutoLink?

There are two settings for each model of the AutoLink: current and count setting. The current setting should be at least 10% below the pickup current of the upstream recloser or substation breaker to ensure that AutoLink will see the fault.

The count setting should be one count less than the upstream recloser or substation breaker to isolate a permanent fault downstream from the AutoLink preventing the recloser from going to lockout.

3.7 How does the AutoLink trip?

The AutoLink is equipped with an electronic control and a mechanical tripping mechanism. By means of the current sensing the electronics determines when the AutoLink should trip. When this happens the tripping mechanism operates and releases a lever that unlocks the AutoLink from its cutout and it falls by gravity, having its pivot in the lower contact. The AutoLink remains hanging in the cutout by means of its lower contact. This gives visual confirmation of the opening of the MV circuit.

3.8 How do I reset the AutoLink after a trip?

The AutoLink is field resettable. To reset the AutoLink please follow the instructions given in the manual. No special tool are needed for resetting the AutoLink. A hot stick is needed to reach the AutoLink in its cutout.

4 General

4.1 Does AutoLink improve quality measures and costs?

The AutoLink improves SAIDI and SAIFI indexes and costs as it facilitates clearing of transient faults without permanent interruption to the customers.

In a distribution line, 80% of the faults are transient and 20% are permanent. Using AutoLink the only faults that remains with permanent interruption to the customers are the permanent ones (only 20% of the total faults).

It also increases revenue of energy as there is no interruption on temporary faults and decreases the operational costs for dispatching crews to reset fuses.

4.2 Can the AutoLink work in 3-phase mode?

The 3-Phase AutoLink is equipped with a mechanical interlock that ensures 3-phase operation.

This application is commonly used in networks with MV motors that require a secure opening when there is a single phase fault and the 2-phase supply to the motor should be avoided as it could damage it.