



ALVIN
Reclose



ALVIN Reclose™

Next generation supply restoration equipment for Safer, Stronger, Smarter Networks



THORNE &
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INTERNATIONAL

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Safer, Stronger,
Smarter Networks

Next Generation Reclose Technology reduces cost and delivers better customer service for the 'self-healing' network of the future.

Keeping the power on is the priority of all Distribution Network Operators (DNOs) so minimising supply interruptions is at the top of the agenda. Faults cost money and disrupt customer service. Low-voltage network faults are a significant cause of Customer Interruptions (CIs) and Customer Minutes Lost (CMLs) and can be the most troublesome and expensive faults to fix.

The Scale of the Problem

In 2014, UKPN estimate that LV network faults contributes to:

	Rural	Urban
Total faults that are LV	80%	90%
Customer Interruptions	10%	40%
Customer Minutes Lost	25%	75%

It is estimated that intermittent single phase to earth faults contribute to at least 50% of LV faults.

Fuses are the traditional solution to low-voltage network protection. Their key limitations are that they require manual intervention to restore supplies – and may not respond effectively or safely to every type of fault.

Intermittent faults, which are increasingly common on ageing cable networks, often result in multiple fuse operations. Inevitably, this leads to poor supply reliability and increases costs due to time on site and part replacements as well as customer complaints.

Solutions do exist that improve on conventional fuses. However, cost-effective, fit-and-forget auto reclose capability has traditionally only been available at higher voltages. Alvin Reclose™ enables intelligent automation and fault restoration on low-voltage networks in a standalone, compact and cost-effective package.

EA Technology's Alvin Reclose™ offers Distribution Network Operators a unique, low-cost supply restoration solution. One that meets the immediate needs of DNOs to improve customer service on ageing, low-voltage networks, while providing the foundation for future automation and communication schemes. In turn, this enables increasingly sophisticated management of LV networks with no requirement to modify existing units. Alvin Reclose's ability to provide a 'self-healing' network for the future sets a new standard for LV Automation equipment that will revolutionise the operation of LV networks.

Why Alvin Reclose™ will revolutionise the operation of LV Networks

- **Automatic supply restoration:** for self-clearing faults, Alvin Reclose™ will 'self-heal' the network and automatically perform multiple circuit recloses, restoring supplies without manual intervention. This enables significant improvements to network performance and customer satisfaction. For permanent faults, it disconnects supplies as quickly as a fuse but unlike a fuse is reset following circuit repair.
- **Saves time and effort:** Alvin Reclose's unique, advanced all-in-one mechanism means no engineer intervention is required on-site. The device tests the network condition remotely, prior to automatically reclosing on the fault. Unlike other devices, this can be done multiple times without the need for engineer intervention.



- **Improved safety:** Alvin Reclose's unique SafeON™ remote operation ensures power can be safely restored. It does this by using specially modulated power pulses through the power cable that acts as a warning to customers or engineers in contact with a damaged cable that power will be restored imminently. The network is automatically tested for the presence of a permanent fault prior to full energisation, while retaining the assurance of backup protection via a conventional fuse.
- **Low cost deployment:** combined with high quality specification, functionality and reliability, Alvin Reclose™ can be widely deployed and left on the system to maintain enhanced system protection.
- **Fully self-contained:** Alvin Reclose™ does not require any specialised installation or ancillary components, requiring only connection to a local power supply. Full analysis and diagnostics are available through the included data port if required.
- **Ready for the future:** Alvin Reclose™ provides an ideal foundation for a range of low-cost add-on services that allow DNOs the flexibility to upgrade to more sophisticated network automation and management at a time that suits their requirements and budgets.
- **Improved network protection:** Alvin Reclose™ is the only retro-fit product that has arc-free switching. This extends the lifetime of network assets, improves safety and reduces maintenance costs by reducing network stresses during supply restoration.
- **Suitable for retro-fit:** Fitting Alvin Reclose™ is simple, fast and safe. Compatible with existing BS88 92mm fuse holders, it can be fitted without tools to a standard LV board by suitably trained field operators.

- **Configurable to your needs:** EA Technology recognises that different network operators have different needs and Alvin Reclose™ can be factory programmed to provide a variety of different protection characteristics and operational settings, offering far greater flexibility than conventional fuse solutions.
- **Comprehensive training** is available, together with access to a lifetime support service with on-call expertise and assistance, enabling the seamless integration of Alvin Reclose™ into every day operation.



Features

- Automatic supply restoration
- Simple, retrofit installation
- Multiple recloses (up to operator-specified limit)
- Arc-free switching
- Remote operation from within substation (for enhanced operator safety)
- Optional automation, telecontrol and monitoring
*Requires Alvin Portal™
- Fully self-contained
- Internal data logging, including fault passage, operation counter and load statistics
- SafeON™ tests network integrity before operation
- Low cost
- Co-ordination with 400A and 315A BS88 fuse characteristics



Technical Specification

ITEM	RATING
Rated Operating Voltage	275V phase to neutral on either pole 440V across poles
Rated Insulation Voltage	690V
Rated Operating Current	400A or 500A as thump option for ALVIN RecloseIT™ version
Operating frequency	50Hz
Rated making capacity	80kA
Rated breaking capacity	80kA
Overcurrent trip characteristic	Inverse time-based on 315A & 400A BS88-2 It zones
Ambient air temperature	-25°C to +45°C
Operating cycles	1000
Voltage measurement	±1.5% 50V to 253V AC RMS
Current measurement	±1% >200A, ±2A ≤200A
Harmonic monitoring	Yes
Directional Fault Indicators	Yes
Fault location ready	Yes
Making on faulty cable	SafeON™ with current limiting to 2.4kA
Standards applied	IEC 60947-2, IEC 61000, IEC60255

Global support

ALVIN Reclose™ can be supplied and supported anywhere in the world, through our network of international sales offices and distribution partners. We provide excellent lifetime support for this system, including:

- Installation and commissioning quality feeders
- Training
- Lifetime technical support
- On-call expertise and assistance

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