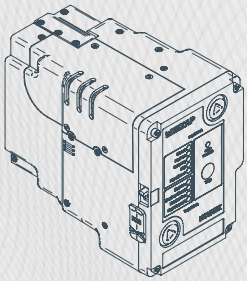
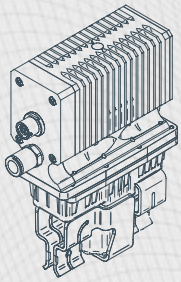




Low Voltage Automation, Meshing and Protection

kelvatek
camlin group

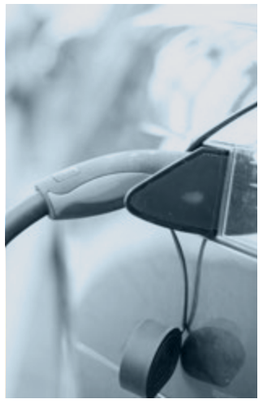
Overview

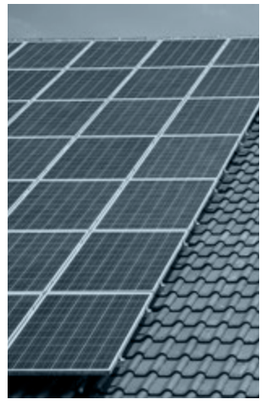
As reliance on the electricity system grows and demand for Low Carbon Technologies (LCTs) rise, the Low Voltage (LV) network will be under increased strain. A combination of increased demand and a higher penetration of distributed generation (DG) can cause voltage, thermal and fault level issues on LV networks.

To overcome these challenges and to defer the costs of traditional reinforcement, Network Operators can invest in smart solutions to help manage LV networks through better utilisation of existing network capacity.

Kelvatek's LV automation solution helps facilitate the installation of additional LCTs on the network with advanced monitoring, protection, meshing and reconfiguration of the LV network and the use of embedded LV vacuum switches and intelligent technology.

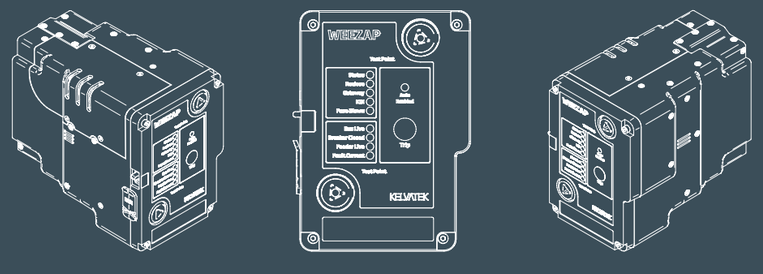
Weezap and Relink are key components of our LV network automation solution. They can be retrofitted to existing networks to allow centralised network management and automation. They assist in keeping costs low for customers, mitigate network issues and help reduce carbon emissions by maximising the utilisation of the existing network.





Weezap

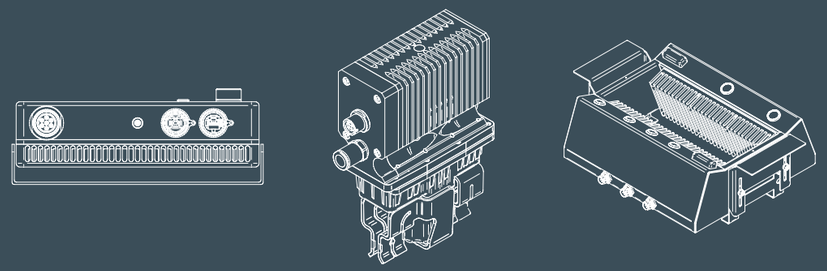
Weezap provides enhanced measurement and protection using a vacuum circuit breaker commutated with a semiconductor switch solution. With specially designed sensors and circuitry this enables advanced protection and monitoring of power flows and power quality. Its compact retrofit design means it is installed directly onto existing LV fuse panels without having to replace LV boards.



Weezap

Relink

Relink enables Network Operators to mesh the network when maximum capacity is reached, and un-mesh the network once the demand is reduced. It facilitates re-configuration of the network topology during fault conditions, such as a permanent LV fault. Relink automatically opens under loss of power, allowing HV sectionalising and HV fault location, which would not be possible if there was a 'back-feed' condition of an HV fault through the LV network. The device is retrofitted directly into LV link boxes in replacement of the solid link or fuse.



Relink

Substation | Switch Module | Control Module

Key Benefits

Low carbon technology enabler

Facilitates the installation of LCT's to the LV network, such as electric vehicles, photo-voltaic panels, and heat pumps, helping to reduce carbon emissions.

Reduced capital spend

Maximises existing network capacity which helps defer the costs of traditional reinforcement.

Automation of LV network

Enables the meshing of LV networks and stabilises voltage along the length of the network.

Reduced costs for customers

Enables direct cost savings for customers of up to £70 per household per year when part of a voltage regulation scheme.

Improved quality of supply

Detects faults before outages occur, reducing Customer Interruptions and Customer Minutes Lost in the event of LV transient faults through auto-reclosing operations. It also locates faults using bespoke distance to fault algorithms.

Increased safety

All devices are installed in an open circuit state and therefore never pick up load or fault current during insertion or tightening. All switching is performed remotely, removing the operator from direct switching actions, significantly increasing safety.

Remote monitoring

Communicates wirelessly which provides a remote connection to the installed devices on the LV network. This enables remote monitoring of the power flows and quality on the network, as well as control of the embedded devices via NMS systems.

Key Capabilities

- Measures key power quality data.
- Integrates directly to SCADA and NMS for visibility and control of the LV network.
- This is the only LV automation solution with true 400A capability (500A inline secondary protection for Weezap).
- With compact designs, Weezap and Relink can be installed on all phases at the substation or link box.
- Allows meshing and un-meshing of the LV network to help mange outages, LV losses and capacity constraints.

Awards and Certifications

THE QUEEN'S AWARDS FOR ENTERPRISE

UK ENERGY INNOVATION AWARDS 2016 — WINNER —

BEST SMART GRID INNOVATION

ISO 9001 CERTIFIED

Contact Details

Head Office

Kelvatek
31 Ferguson Drive
Knockmore Hill Industrial Park
Lisburn BT28 2EX
Northern Ireland

+44 (0)28 9262 6989
sales@kelvatek.com
kelvatek.com

kelvatek
camlin group