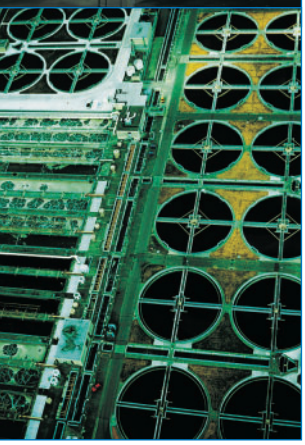
W-VAC
12 - 17.5 kV modular switchgear

Product Focus

- **Safety, Reliability and Performance start with Knowledge and Understanding**



W-VAC

Applying advanced technology with proven engineering excellence, the Eaton brand of W-VAC provides the highest safety and reliability standards without compromising competitiveness. Unique design features and modular, metal-clad construction allow extreme flexibility to meet customers' individual specifications.

- Metal-clad according to IEC standards
- Arc proof according to IEC 60298 Appendix AA
- Modular design suitable for OEM applications
- Single & double tier
- Rear cable entry boxes
- UK: ENA approval

- Compact flush-fronted or closed-door accessibility suits every application and environment.
- Circuit Breaker compartments contain automatically operated shutters for busbar and feeder circuits with padlock facilities in the closed position, and self-cancelling latch open mechanisms for testing.
- Positively driven indicators are displayed on the front panel to show closing spring and breaker status.
- The stored energy mechanism is a true mechanically and electrically trip-free design. Breaker contacts will not touch or close if they receive a mechanical or electrical close command when there is a trip signal.
- For added operator safety, the mechanism is held mechanically trip-free during breaker racking sequence.
- Interlocked and externally operated earthing switches for circuit and busbars are available for all switchboards and for circuits for motor starters.
- Circuit Breaker compartments are designed with horizontally withdrawable carriages for single tier switchgear, and cassettes for double-tier switchgear and motor starters. In both instances the circuit breaker or contactor has a safety interlocked racking mechanism.
- Enclosures are sub-divided to form self-contained compartments separated by earthed metal division plates, and are KEMA certified to IEC 60298.
- Totally segregated compartment for Low Voltage instrumentation and protection equipment.

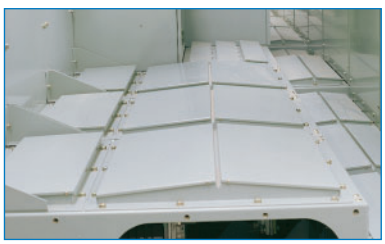
Reliability

Engineered solutions, designed with experience

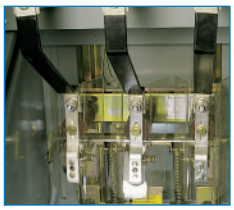
For ultimate flexibility and maximum operator safety, Eaton switchgear comes with a full range of options

- VTs available in either fixed or isolatable versions, circuit or busbar connected, with fixed or removable links or MV fuses.
- Top or bottom MV segregated cable entry is available.
- Terminal boxes can be individually segregated.
- Optional secondary cable termination compartment arrangement is available.
- Carriage position switches to indicate service and isolation are optional.
- Can be supplied with Mechanical key interlocking.

- Internal Arc-proof breakers tested to IEC 60298 Appendix AA are available. Arc flaps at the top of the housing allow gases to escape and thus limit any pressure rise to a withstandable level; however, the flaps are strong enough not to collapse inwards under reasonable external pressure. The equipment is designed to ensure minimum risk to personnel in the event of a fault.



Withdrawable Circuit Breaker compartments for single or double tier switchgear have the added safety of integral interlocked racking mechanisms



Easy access top or bottom MV segregated cable entry with optional segregated terminal boxes.

Earth switching functions designed with operator safety, cost-efficiency and customer uptime in mind

Busbar Earth Switch (Single Tier format)

Mounted in a segregated box on top of the rear compartment of the housing, the busbar earth switch is operated externally. It can be locked on or off with padlocks or with optional key-coded locks. Arc containment types are always operable from the front. A failsafe "reverse operation collapsible joint" is designed into the operating handle. The handle must be removed and turned between opening and closing to provide the vital seconds of delay needed to clear any possible fault.

Circuit Earth Switch

This switch is mounted and operated in the rear housing of the unit. For safety it cannot be operated if the carriage is in service. As with the busbar earth switch, the operating handle contains a collapsible safety joint. An interlock also prevents the carriage being placed into service when the Circuit Earth switch is "on". The switch can be padlocked "on" or "off".

Eaton Medium Voltage Switchgear serving Commercial Buildings, Health and Education.

Performance

Using world-leading technology and proven design solutions engineered for safety and efficiency

Portable Earthing Switch

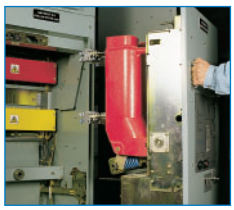
Also available as an alternative to the fixed type is an earthing switch mounted on a horizontal, withdrawable carriage which when in use replaces the Vacuum Circuit Breaker.

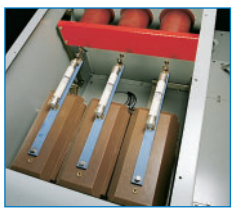
Safety interlocking

Safety is the highest design priority of the product and the equipment is fitted with integral safety interlocks to guard against maloperation.

Voltage Transformers

Voltage Transformers can be withdrawn for isolation by means of an externally operated padlockable mechanism. MV fuses can be provided. Fixed Voltage Transformers with removable links or MV fuses can be isolated by disconnecting a set of links or removal of primary MV fuses.





Innovative in its design, field-proven over thirty years of vacuum circuit breaker production and fully KEMA Certified to IEC 60298, IEC 60129 and IEC 60056, Eaton's brand of Medium Voltage Switchgear and Motor Starters leads the world in safety, reliability and performance.

Safety

World leading technology that is environmentally friendly

Safety
At the heart of Eaton's brand of Medium Voltage Switchgear and Motor Starters sits the world's leading Vacuum Interrupter.

Knowledge
Our research into vacuum technology started in the 1920's and continues today … a commitment to improving performance and decreasing cost.

Understanding
We designed the technology. The Eaton Vacuum Interrupter is the focus of eighty years of experience.

Experience
Millions of our vacuum interrupters have been in operation, in every sort of environment in the world, catering for the widest range of applications.

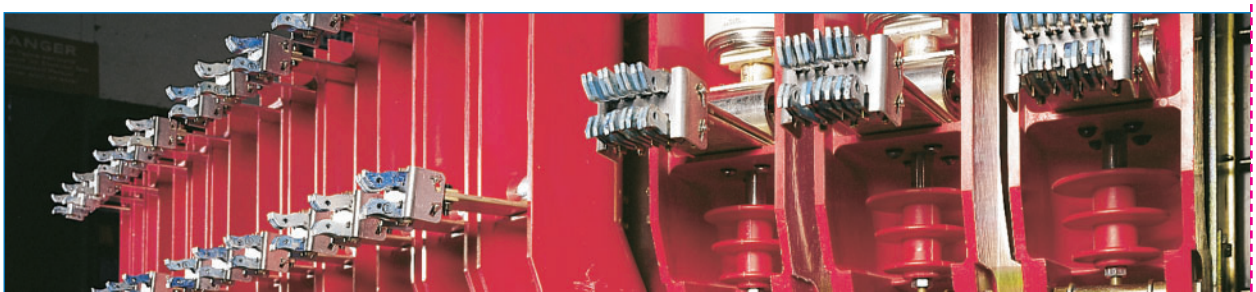
Vacuum Technology
Saves Space and Money Perhaps the greatest advantage of vacuum technology is the compact size of interrupters.

Low Maintenance Operation
Fewer moving parts in the pole units versus other arc interruption technologies give greater reliability.

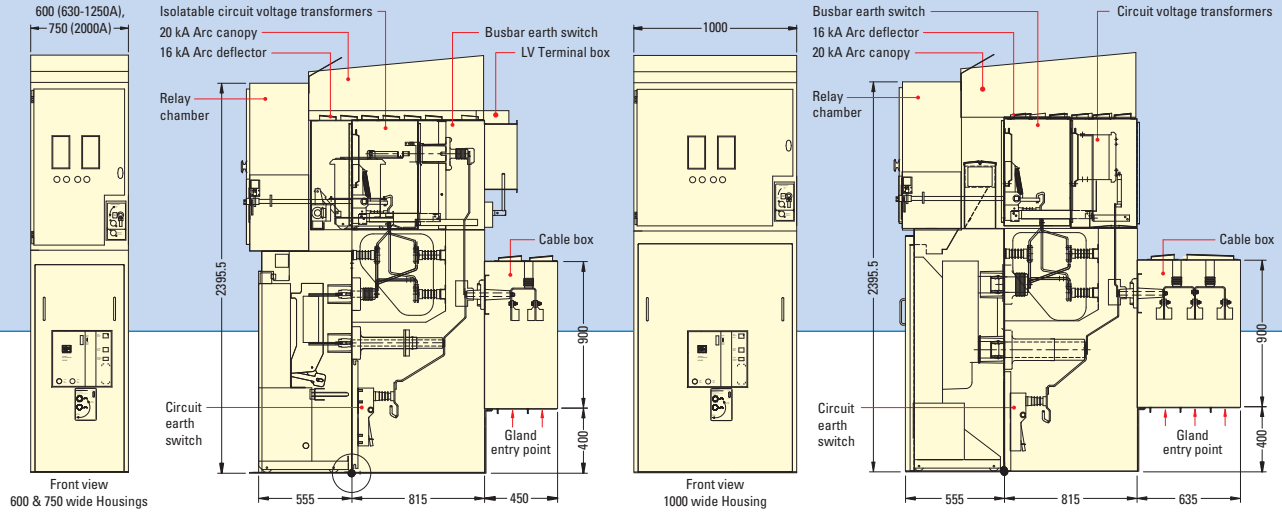
Longer Life
Contact designs prevent hot spots, create less heat and minimise electrode erosion to yield longer life.

Minimal moving parts provide low maintenance Vacuum Interrupter operation.

Increasing global legislation concerning the use of greenhouse gases such as SF_6 and their related disposal costs, makes vacuum technology with its reliability, low maintenance, and low environmental impact the choice for now and the future.



Dimensions (mm)

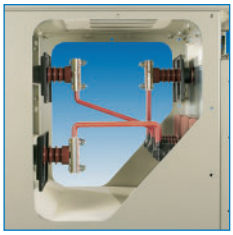


W-VAC **W-VAC**

Technical data

W-VAC		
Rated voltage	IEC 12 kV	IEC 17.5 kV
Rated current busbars	3150	3150
Short-time current	50 - 3	31.5 - 3
Rated current (max.) circuit breakers	3150	3150
Degree of protection	IP 3XD [1]	IP 3XD [1]

[1] NB: a higher protection degree is possible as an option.



Eaton's MV switchgear is fully certified to all relevant IEC standards following independent testing by KEMA laboratories

W-VAC complies with the following international standards	
IEC 60056	Medium voltage alternating current circuit breakers.
IEC 60298	A.C. metal enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV.
IEC 60129	Specification for alternating current disconnectors and earthing switches.
ENA Technical specification 41:36	Distribution switchgear for service up to 36 kV (cable connected).

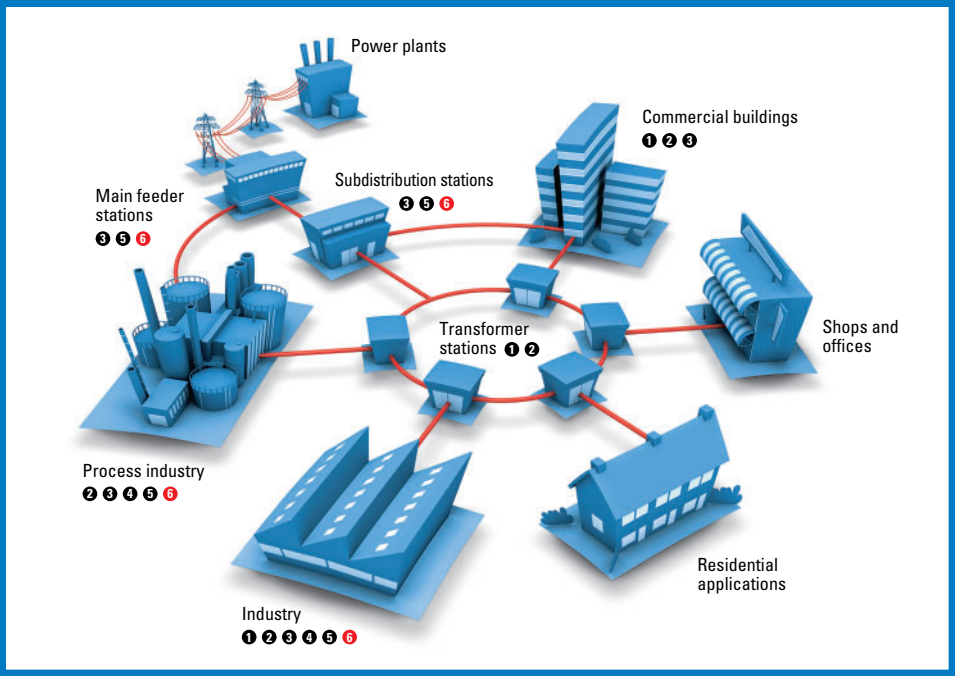
Applications

- Process industry
- Industrial
- Marine & Offshore
- Defense
- OEM's

In the electrical industry, Eaton is a global leader in electrical control, power distribution, and industrial automation products and services. Through advanced product development, world-class manufacturing methods, and global engineering services and support, Eaton's Electrical business provides customer-driven solutions under brand names such as Cutler-Hammer®, Powerware®, Durant®, Heinemann®, Holec® and MEM®, which globally serve the changing needs of the industrial, utility, light commercial, residential, and OEM markets. For more information, visit www.eatonelectrical.com.

Eaton Corporation is a diversified industrial manufacturer with 2006 sales of $12.4 billion. Eaton is a global leader in electrical systems and components for power quality, distribution and control; fluid power systems and services for industrial, mobile and aircraft equipment; intelligent truck drive train systems for safety and fuel economy; and automotive engine air management systems, powertrain solutions and specialty controls for performance, fuel economy and safety. Eaton has 61,000 employees and sells products to customers in more than 125 countries. For more information, visit www.eaton.com.

Eaton medium voltage products in the energy chain



❶ Magnefix ❷ Xiria ❸ SVS ❹ Unitole ❺ MMS 6 W-VAC

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