EATON | Holec

Unitole UP 3.6 - 17.5 kV
Primary substations
Motor control centres

Product Focus

- **Air-insulated withdrawable switchgear with vacuum circuit-breakers and contactors**

Creating Solutions

Eaton Holec creates power-engineering solutions assuring safe and reliable supply of electrical energy. With manufacturing subsidiaries and sales organisations world-wide, Eaton Holec focuses on electrical distribution and power supply in both low and medium voltage ranges.

Eaton Holec

The medium voltage activities of Eaton Holec are directed towards switchgear installations and components for applications in distribution networks (main and substations, transformer stations) and for industrial power supply. The switchgear systems are air or epoxy-resin insulated and are in most cases equipped with circuit-breakers based on Eaton Holec vacuum interrupters. Eaton Holec thus offers an extensive range of switchgear systems and switchgear components, ensuring a safe and reliable distribution of electrical energy.

Unitole Type UP distribution system.

Unitole UP system

Eaton Holec's Unitole UP system is a universal switchgear system. It is specifically suitable for application as a motor control centre in process industry and in primary substations (main distribution stations). Unitole UP switchboards are made for 3 mm steel plates and equipped with vacuum circuit-breakers or contactors. The panels are in metal clad design (according to IEC publication 60298)

Primary substations
Vacuum circuit-breakers (vcb's) are used as incoming and outgoing feeders in primary substations (main distribution stations). The vcb's are mounted on a truck for easy isolation of the fixed part. The truck runs inside the panel on metal guides and rollers; outside the panel the truck is easy to move on its nylon wheels. In the inserted position the truck is automatically earthed via an earth strip in the base plate. The truck is driven into the service position and back by an externally operated spindle.

Unitole - tried and tested technology from Eaton Holec
- Safe in operation
- Safe for operators
- Extremely reliable
- Flexible
- Easy to operate
- ISO 9001 certified (since 1989)

KEMA

CERTIFICATE

Eaton Electric N.V.
Hengelo, The Netherlands

ISO 9001:2000

Motor control centres
Contactor panels can be used in industrial applications, with motors and transformers being switched and protected with contactors, with short-circuit limiting fuses fitted in series. Contactor panels can be assembled in random configuration with feeder and other panels. If a large amount of secondary equipment needs to be assembled in the panel, a 620 mm wide panel is available.

The contactor panels are fitted with state-of-the-art control and protection equipment (e.g. an integrated motor control system) with operation, protection and communication equipment based on computer technology.

Automation
Unitole UP can be equipped with state of the art protection relays and automation for link-up to SCADA or Distributed Control Systems.

Contactors

For motor starters, transformers and capacitor banks, the Unitole system can be provided with contactor panels. Contactors for 3.6 or 7.2 kV are mounted on a truck together with H.V. fuses, and voltage transformers if required.
These contactor trucks can then be used in all type Unitole panels of width 620 mm. Surge arresters can also be mounted at the cable terminals.

Two contactor panels in one

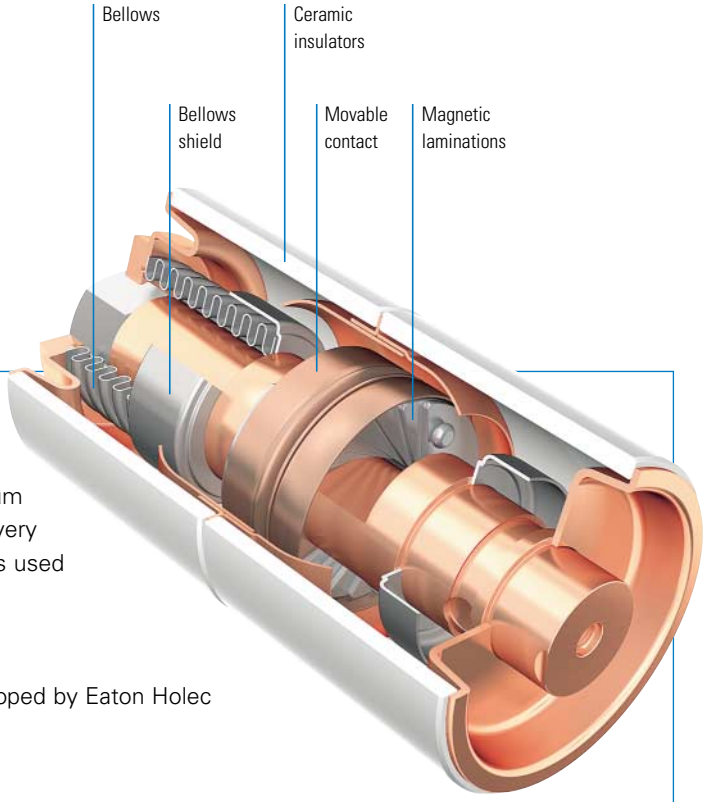
If a compact solution is required two 400 mm wide units can be fitted in a single 800 mm Unitole UP panel.
Feeder panels, outgoing panels with circuit-breakers and contactor panels can easily be combined in a single switchboard.
Insertion, withdrawal and mechanical operation can all take place with the door closed.

Earthing switch

For cable earthing, a fault-make earthing switch is mounted in each compartment as standard. This earthing switch is then made secure by means of an interlock when the truck has been inserted, to prevent the equipment from being switched on by mistake. For busbar earthing a separate panel with a withdrawable fault-make earthing switch on truck is provided.

Turnkey installations

If you wish the switchgear installation and the housing to form a single transportable unit, Unitole installations can be placed inside a container. The advantage here is that assembly and other work on site is restricted to a minimum. In such cases, the entire installation is assembled and inspected by Eaton Holec itself. The container also provides good housing conditions for the installation. On request, the container can be provided with lighting, air conditioning, and/or a separate control room.



Switching devices

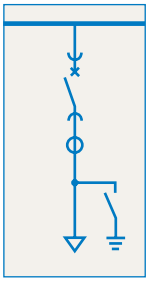
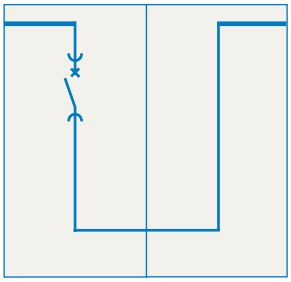
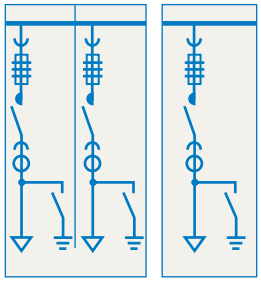
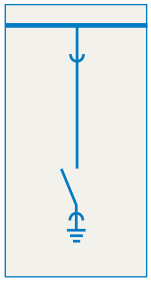
Unitole panels are suitable for a wide variety of switching devices and combinations. The vacuum interrupters developed by Eaton Holec are the very core of the Eaton Holec vacuum circuit-breakers used in the Unitole UP system.

The vacuum circuit-breaker

The vacuum circuit-breaker was specially developed by Eaton Holec and has the following features:

- Small dimensions, takes up little space
- Explosion-free
- Suitable for numerous operations
- No external switching phenomena
- Rapid dielectric recovery ensures circuit interruption at the first current-zero
- Low maintenance requirements
- Long service life

Technical data

Panels Unitole UP 3.6 - 17.5 kV							
		Feeder	Sectionaliser		Motor feeder		Earthing
							
Width	(mm)	800/1000	800/1000	800	800	620	800
Weight	(kg)	800/1000	1000/1200	750	625	625	750
Rated voltage	(kV)	3.6 - 17.5	3.6 - 17.5	3.6 - 17.5	3.6 - 7.2	3.6 - 7.2	
Short-time current 31.5 kA - 3 s	(A)	1250 - 3150 (4000)*	1250 - 3150 (4000)*				x
40 kA - 1 s	(A)						x
40 kA - 3 s	(A)	1250 - 3150 (4000)*	1250 - 3150 (4000)*				
6 kA - 1 s	(A)				2 x 400	400	
2.4 kA - 30 s	(A)				2 x 400	400	

*) Forced ventilation.

Fixed part Unitole UP 3.6 - 17.5 kV	
Voltage ranges	
Rated voltage (kV)	3.6 - 17.5
Impulse withstand voltage (kV)	30 - 95
Frequency	50 - 60
Withstand voltage (kV/1 min.)	10 - 38

Main busbar system	
Rated current (A)	1600 - 3150 (4000)
Short-time withstand current (kA/s)	40 (17.5 kV)
Peak withstand current (kA)	100 (17.5 kV)

Panel	
Degree of protection in acc. with IEC 60529	IP 3XD (door closed); IP 2XD (door open)
Arc resistance in acc. with	
IEC 60298 appendix AA (kA-0.5 s)	31.5 (40)*

*) Optional.

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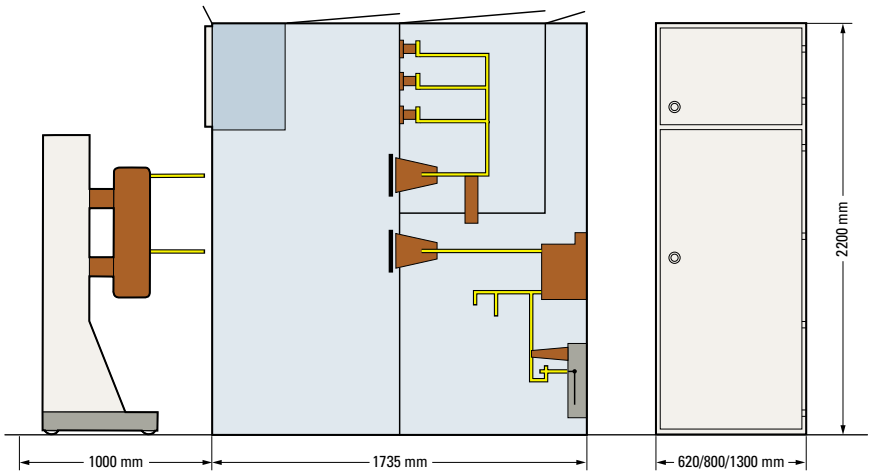

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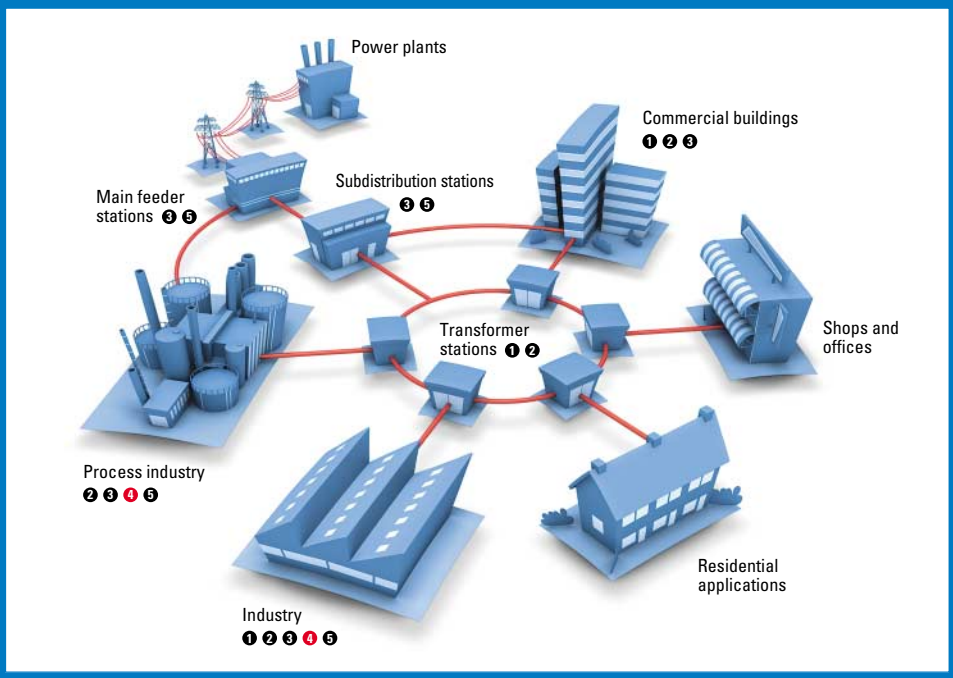
For more information, visit www.eaton.com.

Eaton Holec medium voltage products in the energy chain



❶ Magnefix

❷ Xiria

❸ Innovac SVS

❹ Unitole

❺ Innovac MMS

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Printed in The Netherlands.
Form no. 994103G01 001/1/SG
November 2007