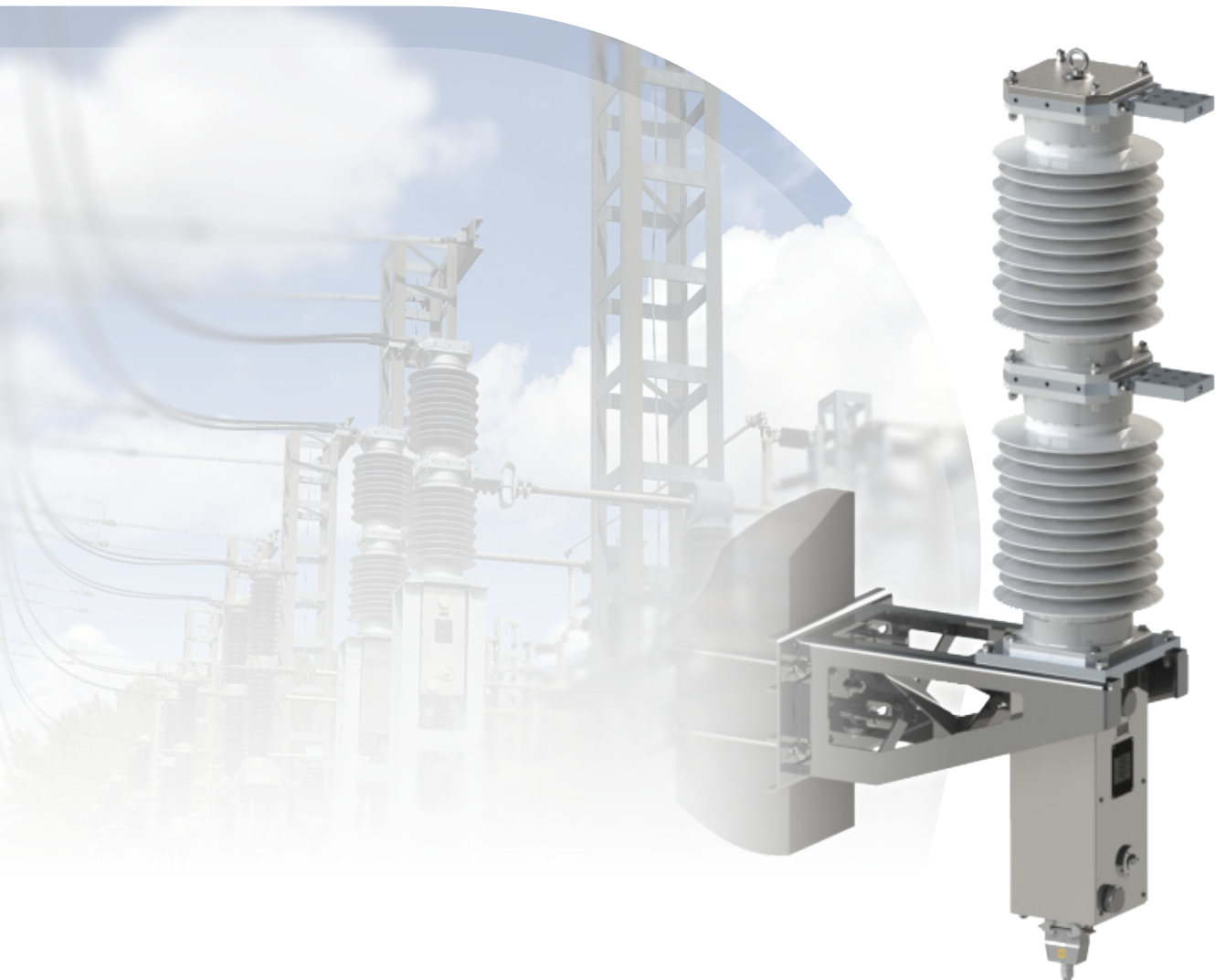


OUTDOOR RAILWAY VACUUM CIRCUIT BREAKER

ESTRA-**ORS25**



GENERAL INFORMATION

With a complete range of equipment and a longlasting expertise in traction power, Sécheron is a world leader for the design and the production of AC vacuum circuit breakers for rolling stock applications (15 kV and 25 kV), with more than 18 000 units in operation worldwide.

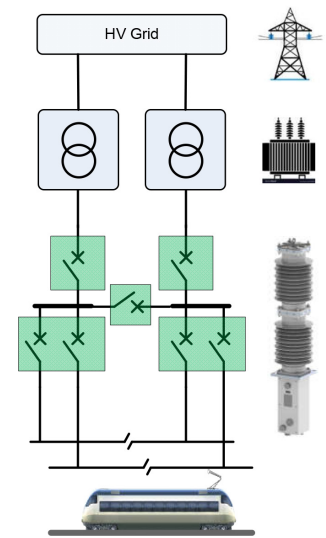
The outdoor railway vacuum circuit breakers are designed to feed the overhead line and are usually placed trackside, in an outdoor substation, in a container or skid-mounted.

Our equipment is developed on world-leading design and technology and proven acceptance.

APPLICATIONS

Available in single-phase or two-phase systems, the ORS circuit breakers switch and protect the main railway traction circuits including the overhead line at a voltage level of 25 kVAC.

The ORS is designed for conventional commuter trains, main line railway, high-speed rail (> 250 km/h) and very high-speed trains (> 350 km/h).



Typical AC traction substation

STANDARDS

Sécheron outdoor railway vacuum circuit breakers are compliant with railway standards:

- **IEC 62505-1 (EN 50152-1)** | Railway applications – Fixed installations – Particular requirements for AC switchgear – Part 1: Circuit breakers with nominal voltage above 1 kV
- **IEC 62271-1** | High-voltage switchgear and controlgear – Part 1: Common specifications for alternating current switchgear and controlgear
- **IEC 62271-100** | High-voltage switchgear and controlgear – Part 100: Alternating-current circuit-breakers

MAIN BENEFITS

- ✓ Robust and compact, for outdoor installation
- ✓ Pole 100% maintenance free (neutral nitrogen gas under controlled pressure)
- ✓ Easy to install (specific configurations and options to suit all operating conditions and requirements)
- ✓ Main control unit including extended diagnostic functions
- ✓ Operating mechanism driven by a variable speed magnetic actuator
- ✓ Improved vacuum interrupter electrical life, thanks to the optimised closing and opening principle
- ✓ Compliant with IEC and EN standards

DESCRIPTION & DATA

HIGH VOLTAGE CIRCUIT – POLE

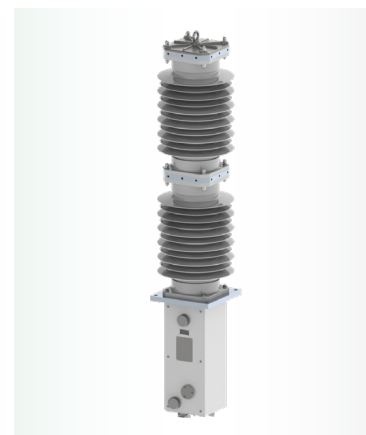
Suitable for single-phase or two-phase applications, the ORS25 is fitted with a railway specific vacuum interrupter, designed to break high short-circuit current. The pole is made of 2 stacked polymeric insulators, completely sealed and filled with neutral nitrogen gas under controlled pressure.

The vacuum interrupter is operated by a magnetic operating mechanism and a push rod, each of them mounted in one axis.

The pole is delivered with installation brackets, which makes the installation work on site very easy and efficient.

The connection between the pole and the control box is made with a flexible halogen-free shielded control cable.

Emergency opening is always possible by means of one special hand trip lever.

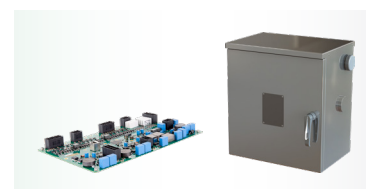


	Symbol	Unit	Value
Rated voltage	U_{Ne}	[kV]	27.5
Rated lightning impulse withstand voltage	U_{Ni}	[kV]	250
Rated power-frequency withstand voltage	U_d	[kV]	105
Rated frequency	f_r	[Hz]	50 / 60
Rated normal current	I_r	[A]	1 250 to 2 500
Rated duration of short-circuit	t_k	[s]	3
Rated short-circuit breaking current	I_{SC}	[kA]	25
Rated short-circuit making current	I_{MC}	[kA]	63
Mechanical endurance class	-	-	Class 3, 10 000
Weight	-	[kg]	140
Dimensions (W x D x H)	-	[mm]	368 x 368 x 1947
Relevant standard	-	-	IEC 62505-1

LOW VOLTAGE AUXILIARY CIRCUIT – CONTROL BOX

The control box is housing the main control unit developed by Sécheron and the different LV components according to the specific requested features.

The main control unit has extended diagnostic functions (power drive supervision, coil supervision, capacitor bank supervision, inputs supervision and outputs supervision).



	Symbol	Unit	Value
Rated supply voltage of auxiliary	U_a	[VDC]	48 to 220
Option: Rated supply voltage of auxiliary	U_a	[VAC]	230
Maximum power load (1)	P_{max}	[W]	≤ 150
Nominal power load	P_o	[W]	≤ 7
Mechanical opening time	T_o	[ms]	≤ 40
Mechanical closing time	T_c	[ms]	≤ 70
Weight	-	[kg]	22
Dimensions (W x D x H)	-	[mm]	500 x 370 x 530



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