Air insulated MV switchgear

Our extensive catalogue of solutions includes switchgear dedicated to medium voltage. On the basis of realised projects, you will be introduced to our capabilities. The main locations for such projects are the largest open-pit copper ore mines in the world (e.g. Peru, Panama, Sweden, Kazakhstan)

OUR CAPABILITIES:

Each implementation begins with the creation of a mechanical design, so using Inventor 3D device modeling software, our designers created a comprehensive housing design. Production took place using machinery at the Radiolex facility in Gdańsk. One of the aesthetic design assumptions was to create a paint structure in different colors from the RAL palette on the outside and inside of the casing, which, thanks to a modern painting line, is not a major problem for us.

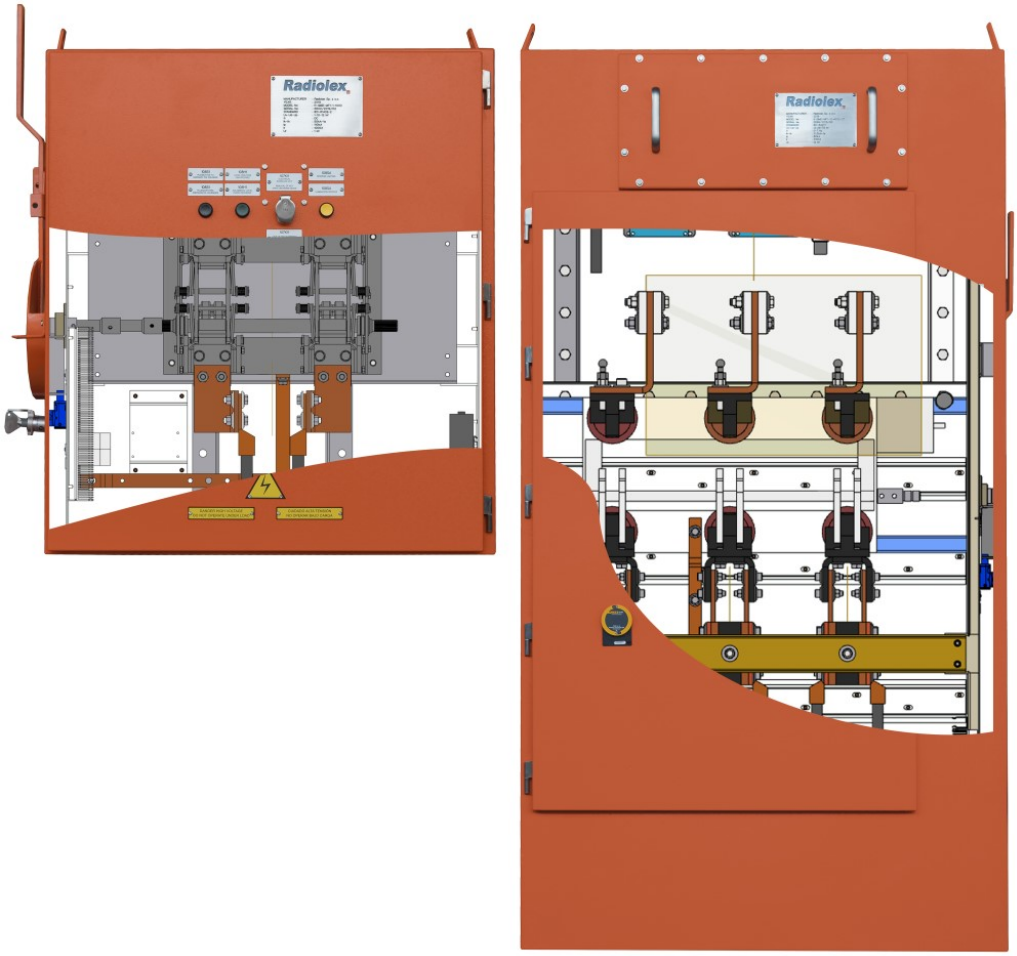


Fig 1. LV and MV switchgear to power the mill – photo of the implementation and cross-section of the interior from a CAD program

As part of the discussed switchgear designs, we carry out:

- pressure safety flaps in the roof to possibly direct the generated energy and hot gases in a direction safe for the operator,
- output of the busbar bridge from the disconnector (rated current from 3 to 5 [kA]). This bridge must perfectly fit the terminals of the windings of the engine driving the mill of the open-pit mine,
- The housing is additionally equipped with numerous locks that prevent opening the disconnector under load,
- installation of infrared windows that enable safe inspection of the main current path with a thermal imaging camera during uninterrupted operation of the device.

Table 1. Electrical parameters of switchboards

		MV Switchgear STATOR POWER	**LV switchgear** ROTOR POWER SUPPLY
Un	[V]	12000	1000
In	[A]	3150	1000

f	[Hz]	0-7	DC
IP	[-]	IP56	IP56
IK	[-]	IK10	IK10

Where:

Un – rated voltage,

In – rated current,

f – frequency,

IP – the degree of protection provided by the housing against the ingress of liquids and solids

IK – mechanical strength classification.

We deliver versions of this type of switchboards periodically to various parts of the world, they differ in the rated current of the current circuit and the disconnector, therefore, before the switchboards are delivered to the facility, type tests were performed for each solution in accordance with the PN-EN 62271-200 standard in the laboratory of the Institute of Electrical Engineering in Warsaw. Laboratory tests included checking the resistance of the track to short-time and peak withstand currents, as well as insulation tests, confirmation of the IP and IK protection levels, and the rated current was determined on the basis of temperature rise tests.

Fig 2. Photo taken with our participation during tests at IEL in Warsaw

After conducting FAT tests with the employee responsible for the mine mill power supply project, the MV switchboards were adapted for sea navigation. Moisture absorbers and additional protection against corrosion using special “Vapor” capsules are inserted inside the housing. Then the switchgear was vacuum packed with aluminum plastic foil and placed in a wooden box with a shock indicator glued to the upholstery.

We offer our services comprehensively, therefore, at the client’s request, we also handle the customs clearance procedure.

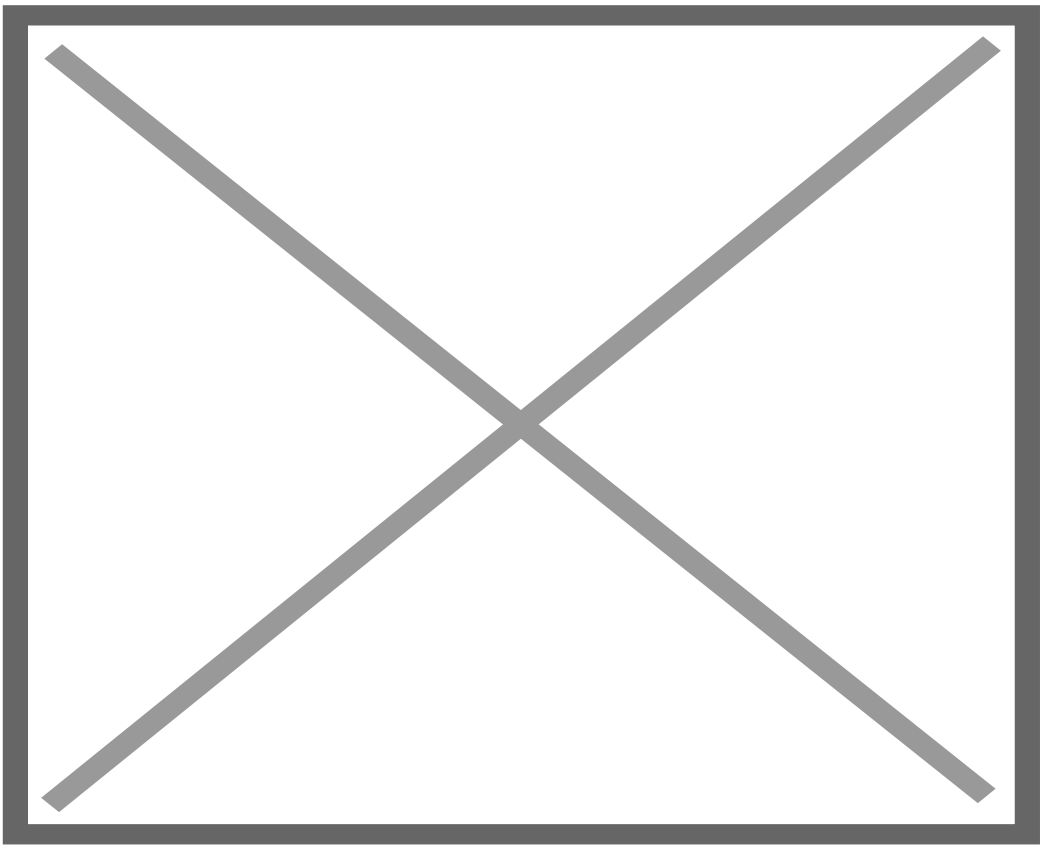
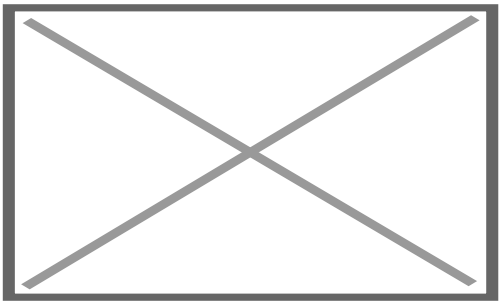


Fig 3. Packing the stator switchgear

SEE OUR SAMPLE PROJECTS



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GALERIA PRODUKTU WRAZ Z PRZYKŁADOWYMI REALIZACJAMI

PRZYKŁADOWA REALIZACJA
EXEMPLARY OF IMPLEMENTATION

Radiolex

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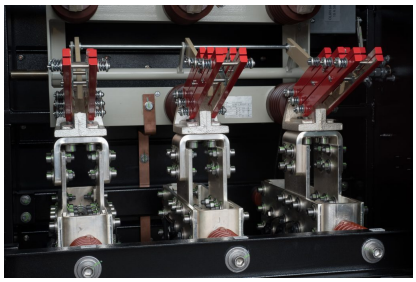

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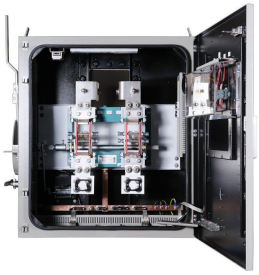

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