


 Transformers used in control cabinets

 MV Current limiting reactors

 5-leg core transformers used in flameproof transformer stations

 Water cooled reactors for drive systems

 Sine-wave and harmonic filters used in mining drive systems

 Water-cooled transformers for powering a longwall shearers

 Transformers for powering starter shutdown systems and groups of control devices

 Transformers for powering longwall shearers and roadheaders



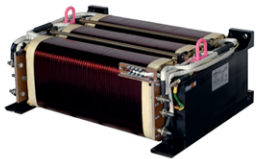
## ELHAND Components for Mining Industry



We are a leading manufacturer of inductive components for the Mining, Oil & Gas, Maritime, AC Drives, Railway, and Power Electronics industries. Our offerings include low and medium voltage transformers, reactors, and filters designed for the most demanding applications.

Quality Supported by Certificates





### Transformers for powering longwall shearers and roadheaders

ET3oG Type Transformers can be regarded as the main power source providing longwall shearers and roadheaders with electric power. They provide galvanic isolation to the mining machine from the mains voltage and adapt to the needs of the device. These transformers are working inside the body of the roadheader or longwall shearer in a very harsh environment.

- Power range: up to 300 kVA\*
- Protection degree: IP00 to be installed inside the roadheader
- Voltage range: up to 3,3 kV\*
- Cooling: AN

ET3oGH

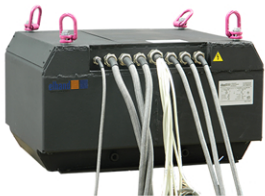


### Sine-wave and harmonic filters

Sine-wave filters (EF3LC) and harmonic filters (EF3H) work with high efficiency longwall shearers, roadheaders, and other paving and extraction machines. Filters are ideal for converter drive systems, as well as major power stations, reducing harmonic distortion in voltage or current. ElhandCutCore™ technology and the maximum reduction of power losses allows for the use of our equipment in flameproof enclosures.

- Power range: 2,2 - 2600 kW
- Frequency: 0 - 200 Hz
- Cooling: air natural - no fans to maximize the filter's lifetime
- Voltage range: 380 - 690 V
- Protection degree: IP00 - IP66

EF3LC | EF3H



### Water-cooled transformers for powering longwall shearers

ET3oGCH type Transformers can be regarded as the main power source providing longwall shearers and roadheaders with electric power. Thanks to the water cooling, the overall dimensions are significantly reduced. Whole construction is filled with the poliuretan resin which ensures the high protection degree and extra endurance against pollution and vibrations. They provide galvanic isolation to the mining machine from the mains voltage and adapt to the needs of the device.

- Power range: up to 300 kVA\*
- Protection degree: IP54 to be installed inside the roadheader
- Voltage range: up to 3,3 kV\*
- Cooling: WF

ET3oGCH



### 5-leg core transformers used in flameproof transformer stations

ET3H Transformers - the main elements of the mining station executed to explosion-proof standards. These transformers allow for powering and safely working with the devices supplying mining machines.

- Power range: up to 3 MVA
- Protection degree: IP00 to be installed inside the flameproof enclosure
- Voltage range: up to 21 kV\*
- Cooling: AN

ET3H

\* or higher/other on request



## ELHAND Components for Mining Industry



Lower Your Operational Expense by Using Newest Magnetic Technologies and Modern Designs.

- Cost optimization.
- High quality at a reasonable price.
- Highly customized, non-standard solutions.
- Full service: design, manufacture, transport.
- Little carbon footprint.
- Made in Europe.

40+  
Years of Experience



### Transformers used in control cabinets

**Single-phase ET10G Type Transformers** are used to power networks and control devices, lighting, signaling, etc. Those transformers are usually produced as multiwinding or multitapping units. The variety of voltage levels allow the use in multiple applications located in different countries.

- Power range: up to 2,5 kVA
- Protection degree: IP00
- $U_1$ : up to 1140 V
- $U_2$ : up to 500 V

ET10G

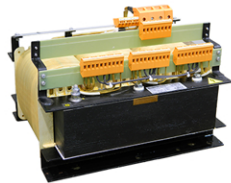


### Water-cooled reactors

Resin-encapsulated drive reactors with water cooling, adapted for use with mining drive systems. Water cooling allows for a reduction in the size of the reactor. Encapsulation with polyurethane resin protects against moisture and strengthens the mechanical structure. The reactor parameters are customized according to the client's specifications.

- Power range: adjusted to mining inverter parameters
- Voltage range: up to 1140 V\*
- Cooling: WF
- Protection degree: IP00 to be installed inside the flameproof enclosure

ED3Z



### Transformers for powering starter shutdown systems and groups of control devices

**Transformers for powering starter shutdown systems and groups of control devices. ET30G Type Transformers** usually feed the starter switches and other groups of controls. They are also intended to power lighting networks or other assistive devices. These transformers are usually mounted in flameproof enclosures that meet the requirements of potentially explosive areas.

- Power range: up to 40 kVA
- Protection degree: IP00
- $U_1$ : up to 1140 V
- $U_2$ : up to 500 V

ET30G



### Medium voltage air-core reactors

Current limiting air reactors are inductive components connected to the main supply. They act as an additional reactance installed in series to the current path thus short-circuit current value is lowered. During regular operation (in no fault condition), linear current flows through the reactor which generates a voltage drop and small power loss. Reducing value of the short-circuit current allows the selection of switchgear, cables and electrical equipment with reduced short-circuit strength.

- Voltage range: up to 15,75 kV
- Reactance voltage drop: 2%...8%
- Current range: up to 2 kA
- Cooling: AN

ED3PH

\* or higher/other on request



## ELHAND Components for Mining Industry

We manufacture transformers and reactors designed to meet strict mining requirements, including high ambient temperatures, dust, moisture, condensation, and limited ventilation or space. Reliability of electromagnetic components is crucial for stable extraction and compliance with safety standards. With extensive experience in producing medium voltage transformers and water-cooled reactors for mining shearers, we also supply products for the entire mining infrastructure, including safety systems.



# Selected Projects

## MV Power Transformer for copper mines

**Power:** 630 kVA

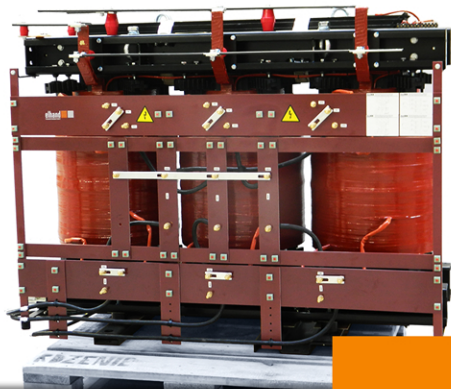
**Voltage:** 10(6,0)//0,525 kV

**Protection degree:** IP00

**Cooling:** AN

**Application:** Flameproof enclosures

**Production:** 2022



## MV Power Transformer for coal mines

**Power:** 2,6 MVA

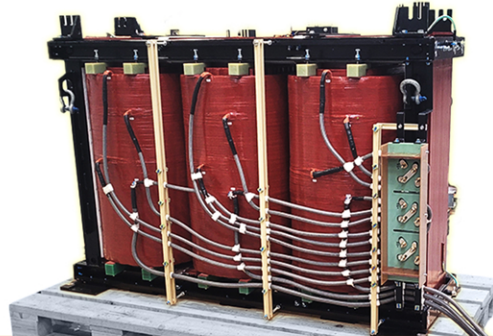
**Voltage:** 6,0/3,3 kV

**Protection degree:** IP00

**Cooling:** AN

**Application:** Flameproof enclosures

**Production:** 2023



## MV Current Limiting Reactors

**Current:** 630 A

**Voltage:** 6,3 kV

**Protection degree:** IP00

**Cooling:** AN

**Application:** Switchgears located near the high power generation units

**Production:** 2022



## ELHAND Components for Mining Industry



- Perfectly tailored to the unique needs and working conditions of the client.
- Compliant with international standards and certifications.
- Durability and minimal maintenance requirements.
- Robust construction and high-quality materials.
- Safety in harsh mining conditions.
- Lower operational and maintenance costs.
- Reduction in the risk of failures and downtimes.
- Higher efficiency and operational effectiveness.

**40+**  
Years of Experience