



# DISCONNECTORS

Your partner for high-voltage  
and medium-voltage disconnectors



**ALPHA-ET**

Current and voltage – our passion



## ALPHA Elektrotechnik – all highly charged

Established over 80 years ago in Nidau, Switzerland, ALPHA Elektrotechnik AG is a company steeped in tradition. Starting out in the power transmission business selling disconnectors for medium- and high-voltage networks, ALPHA also has a separate business unit – “cable solutions” – for the transfer of energy in medium voltage systems of modern railways.

First-class engineering ensures continuous further development and guarantees that end products are of a high quality. An extremely efficient supply chain gives us a high level of flexibility, thereby enabling us to take on projects of various sizes. The international references we have received are an impressive indicator for the quality of our products and services.

Our disconnectors have been used around the world for a number of decades and have proved to be very efficient under a wide range of conditions. The power transmission technology on high-speed trains functions reliably and ensures that trains operate safely. The reliability of our products and the fact that they are guaranteed to function for a number of years are major indicators of quality. In addition we guarantee an outstanding level of service provided with the products, as well as on-site installation of technology and training sessions.

The company is located right in the centre of the Swiss watch industry. The area is well-known for its exceptional expertise in precision mechanics and its skilled workers. ALPHA employs a number of staff who have been at the company for many years, bringing with them a high degree of expertise and excellent manufacturing skills.

In 2015, ALPHA became a member of the PFIFFNER Group (headquartered in Hirschthal, Switzerland) to preserve the continuity of the company. ALPHA is supplementing the core business in the field of instrument transformers. With the bushings produced by MGC Moser-Glaser Ltd. and the powerful market position of the international subsidiaries, the PFIFFNER Group with ALPHA, offers a very broad range of products for customers and distribution partners for the transfer of energy in networks of all voltage types.



## DISCONNECTORS for high- and medium- voltage networks

Without risk over time

ALPHA Elektrotechnik has specialised in becoming an all-rounder for disconnectors for high- and medium-voltage networks from 3 to 550 kV. The manufacturing programme encompasses products that are designed for both external and internal applications.

As disconnectors need to satisfy the particular requirements of a customer in a targeted way, they are an important component in energy distribution. Given the wide range of requirements and climatic conditions, each of the specification is unique and differentiates the disconnector from any other.

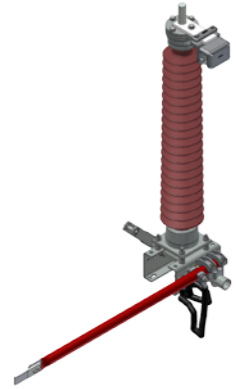
However, ALPHA disconnectors do have a common feature: they embody the high quality and reliability that enable them to deliver long-term performance under extreme conditions such as icy and high temperatures, significant sun exposure, sand, wind, earthquakes and so forth – an additional benefit that has absolutely no bearing on the cost-benefit calculation. Insulators, contacts, motors, pantographs: all the essential components perform as a single unit. More than 80 years of experience, more than 800 deliveries of disconnectors annually and more than 80,000 disconnectors in the network are all the proof you need.

ALPHA also offers post-production, maintenance, replacement and modification services for existing disconnectors. On-site services and installation complete the portfolio. The continuous enhancement of our products is a daily challenge where we contribute our experience of decades.

**DISCONNECTORS: without risk over time - all highly charged**

# High-voltage disconnectors

Outdoor



EF (24–550) kV

- Earthing switch
- Outdoor
- $I_k$ : 80/31.5–160/63 kA



TFPK (72.5–170) kV

- Pantograph disconnector
- Single scissor design
- Outdoor
- $I_N$ : 1600–3150 A
- $I_k$ : 100/40 kA



TFPA (170–245) kV

- Pantograph disconnector
- Single scissor design
- Outdoor
- $I_N$ : 2000–4000 A
- $I_k$ : 100/40 kA–160/63 kA



TFP (245–550) kV

- Pantograph disconnector
- Double scissor design
- Outdoor
- $I_N$ : 2000–4000 A
- $I_k$ : 100/40 kA–160/63 kA

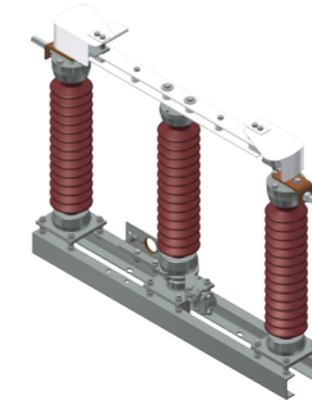
# High-voltage disconnectors/drives

Indoor and outdoor



CBD (72.5–550) kV

- Center break disconnector
- Outdoor
- With or without integrated earthing switch (CBDE/CBDEE)
- $I_N$ : 1600–4000 A
- $I_k$ : 80/31.5 kA–160/63 kA



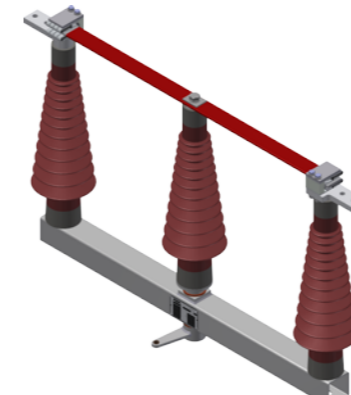
TFD (72.5–245) kV

- Double break disconnector
- Outdoor
- With or without integrated earthing switch (TFDE/TFDEE)
- $I_N$ : 1250–2800 A
- $I_k$ : 80/31.5 kA–125/50 kA



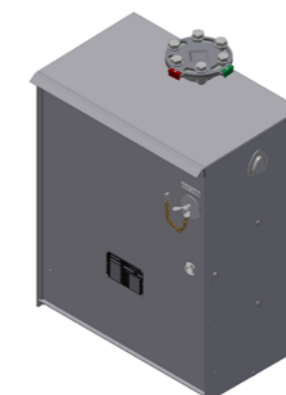
TFX (170–420) kV

- Double break disconnector
- Outdoor
- With or without integrated earthing switch (TFXE/TFXEE)
- $I_N$ : 3150–4000 A
- $I_k$ : 100/40 kA–160/63 kA



TID (72.5–123) kV

- Double break disconnector
- Indoor
- With or without integrated earthing switch (TIDE/TIDEE)
- $I_N$ : 630–3150 A
- $I_k$ : 80/31.5 kA–100/40 kA



MD

- Motor drive
- DC: 110–220 VDC
- AC: 230–400 VAC
- 70° or 90°



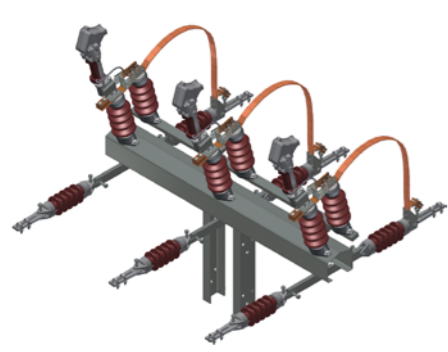
HD

- Hand drive
- Electromechanical locking mechanism with 110–220 VDC
- 70° or 90°



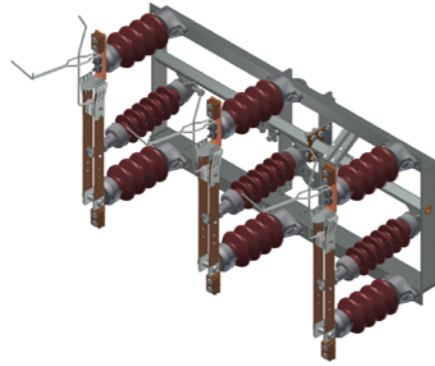
# Medium-voltage disconnectors

Indoor and outdoor



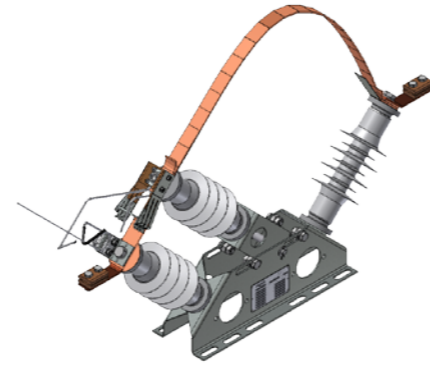
**FSO (24–36) kV**

- Over head line (OHL) switch with arcing horns, arc quenching chamber or forced earthing
- Outdoor
- $I_N$ : 630 A
- $I_k$ : 60/24 kA



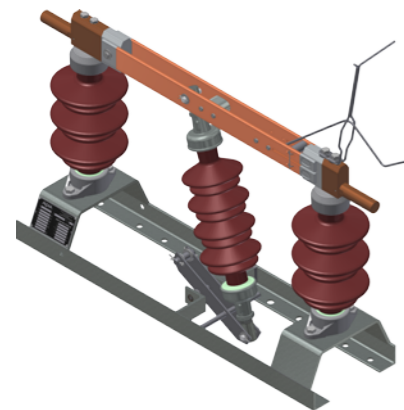
**FSU (24–36) kV**

- Branch switch with arcing horns, arc quenching chamber or forced earthing
- Outdoor
- $I_N$ : 630 A
- $I_k$ : 60/24 kA



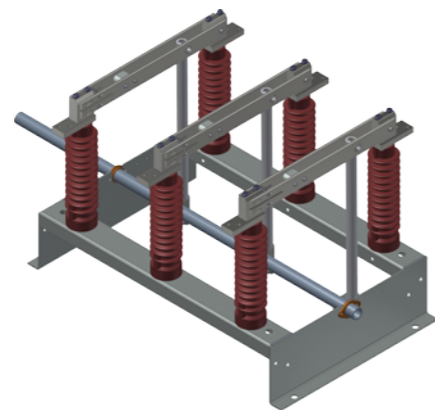
**FSM (24–36) kV**

- Over head line (OHL) or branch switch with arcing horns or arc quenching chamber
- Outdoor
- $I_N$ : 630 A
- $I_k$ : 60/24 kA



**TFS (12–52) kV**

- Vertical disconnector for railway applications with spark conductor
- Outdoor
- $I_N$ : 630–3400 A
- $I_k$ : 80/31.5 kA–100/40 kA



**TIS (24–52) kV**

- Vertical disconnector with or without integrated earthing switch
- Indoor
- $I_N$ : 600–3400 A
- $I_k$ : 80/31.5 kA–100/40 kA



**EI (24–72.5) kV**

- Earthing switch
- Indoor
- $I_k$ : 80/31.5 kA–100/40 kA

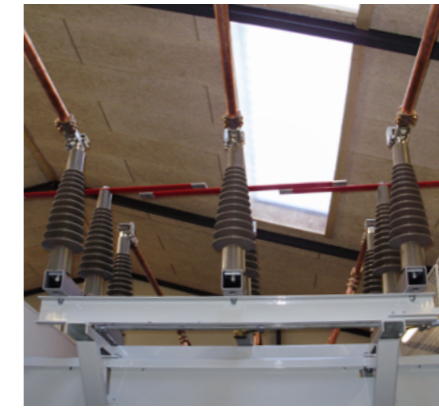
# References

Indoor and outdoor



**Switzerland**

- Type TFD double break disconnector
- Outdoor, 72.5–245 kV
- Scope of delivery: 300 units



**Denmark**

- Type TID double break disconnector
- Indoor, 72.5 kV
- Scope of delivery: 30 units



**Austria**

- Type CBDE center break disconnector with integrated earthing switch
- Outdoor, 72.5–420 kV
- Scope of delivery: 88 units



**Spain**

- Type TFPK pantograph disconnector
- Outdoor, 123 kV
- Scope of delivery: 121 units



**Belgium**

- Type CBDE center break disconnector with integrated earthing switch
- Outdoor, 80–420 kV
- Scope of delivery: 114 units



**Switzerland**

- Type TFPA pantograph disconnector
- Outdoor, 170–420 kV
- Scope of delivery: 180 units

and another 80,000 disconnectors in the network

## DISCONNECTORS



## TRACTION



Current and voltage – our passion

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**ALPHA** Elektrotechnik AG  
Schlossstrasse 13  
2560 Nidau / Switzerland

☎ +41 32 3328700  
☎ +41 32 3312679  
✉ [mail@alpha-et.ch](mailto:mail@alpha-et.ch)  
💻 [www.alpha-et.ch](http://www.alpha-et.ch)

### Member of PFIFFNER Group

This document has been drawn up with the utmost care. We cannot, however, guarantee that it is entirely complete, correct or up-to-date.

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