



VEO

Valid for you.

VEBA 5000

bus duct system

VEO knows your needs



"Close collaboration with our customers, and more than 5 million man hours of experience, puts us in the best position to deliver automation and electrification solutions for energy production, distribution and consumption to customers worldwide."

VEO's field of expertise is energy. We provide customised automation and electrification solutions for customers in the power generation, distribution and process industries.

Our services range from partial deliveries to turnkey projects, including pre-planning, equipment deliveries, project management, installations, commissioning and user training. Our know-how also extends to plant modernisations, maintenance and system updates.

Independent – in the best interest of customers

We want to be an available, attentive and responsible partner, able to flexibly accommodate our customers' changing needs. Cooperation with all leading equipment suppliers in the field ensures that the solutions provided to our customers will always be the most suitable and the most advanced available.

Know-how throughout the energy chain

Our extensive experience is visible in all major fields of the energy sector. Our know-how is cultivated and passed on to the next generation through the VEO Academy, whose expert seminars and training are also available to our customers. Our operation is based on the ISO9001:2000 quality management system, which is audited annually by both DNV and SGS-Fimko Ltd.

VEO manufactures its core products in-house. The tailor-made solutions offered to our customers are based on these core products with the addition of other suppliers' equipment in order to provide the best available solution for each project. In addition to control, protection and automation systems for power production, we deliver substations and medium voltage switchgears for distribution systems as well as low voltage switchgear, drives and automation systems for the process industry.

VEBA 5000 bus duct system

VEBA 5000 bus duct is developed for industrial electrification offering diverse performance even in the most demanding environments.



Our bus ducts are suitable for power distribution feeding and branching and are designed according to customers' specific needs. The modular design of the bus ducts means that they are well suited for a variety of special applications in both new installations and modernisations.



The plain, self-supported and insulated structure along with the excellent short circuit withstand, ensure a safe and economic system. Commissioning is straightforward and, with the pre-manufactured structure, the finishing work during installation is fast.

VEBA 5000 bus ducts are manufactured from aluminium or copper, and the flat profiles are coated with special purpose mixed black PVC plastic or alternatively with grey halogen-free special plastics. In walkways or exterior parts the mechanical shielding can additionally be strengthened according to needs.

Bus ducts certified by SGS Fimko Oy are provided with CE and FI labels according to the standards.

VEBA 5000

- safe and reliable
- short circuit protected
- light and robust
- quick to install
- economical
- halogen free (option)

VEBA 5000

Technical solutions

Construction

Hot moulded insulation coating applied to the bus bar during manufacture makes the bus bar superior in terms of current-carrying capacity and meets the requirements for touch safety. The maximum continuous operating temperature for the insulation is +100 °C, and it will withstand class IK08 impacts at a temperature of -25 °C. The bus duct structure is self-supporting and equipped with a PE bus bar to which all the metal frame components are connected. This can also be used as a protective earth for various distributions systems.

Corners

The horizontal and vertical corners are formed by bending, which significantly reduces the number of joints. Bending also allows for small sideways movements.

Extensions

The bus bar extension connection enclosures have the same impact resistance and degree of insulation as the main bus bar. The basic structure has an IP31 degree of protection. When sealed the protection level is increased to IP54.

Capped thermal imaging openings are located on the lower enclosure surfaces. Straight bus duct sections exceeding 20 metres in length are equipped with flexible connections, which are enclosed with hardware similar to fixed connections.

Interface to the equipment

The bus ducts can be led into the equipment from above or from below, or the connections can be made externally depending on the space available for installation. The shipments always include the required mounting hardware to the switchgear. The interfaces are enclosed and fixed into the equipment structures according to the required degree of protection.

Fire barriers

Fire sections between rooms are constructed of approved fire-resistant materials to withstand arcing. The most common classifications are EI-60, EI-120 and EI-180. When the sections are correctly assembled they withstand arcing produced from power of approx. 30 MW.

Transformer interfaces

Bus ducts can be easily connected to different types of transformers. The connection is always a flexible type and enclosed if necessary. If required, current transformers with connection enclosures can be installed close to transformer poles. All enclosures support thermal imaging.

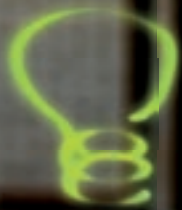
Optional accessories:

- Flexible joints for transformer connections
- Fire barrier sections (EI-60, EI-120 and EI-180)
- Separate mechanical enclosure for the bus duct system
- Tube for cables
- Flexible connection for thermal expansion
- Current transformers





"With all-round competence and decades of experience in the energy sector, our mission is to ensure our customers' success and promote their sustainable growth."



VEBA 5000

Technical data

"As a total supplier, our optimized, turnkey deliveries cover all your requirements from preplanning to implementation and training."



Technical data

Rated voltage	1000 VAC, 1500 VDC
Rated current	1000...5500 A
Thermal limit current I _{cw} (1 sec)	80 kA
Dynamic limiting current I _{pk}	176 kA
Degree of protection by enclosure	IP20-IP54
Phase divided screen protected bus duct without enclosure	

Dimensions

Heading	1-level	2-level	3-level
Width, mm	585	585	585
Height, mm	101	175	245
Current A, Al	1000...2200	2500...3600	3600...4500
Current A, Cu	1000...2650	3000...4600	4600...5500
Weight kg/m, Al	15...30	30...50	50...70
Weight kg/m, Cu	40...60	70...90	105...125
Ambient temperature	35 °C, IP31		

Bus duct requires the following aperture dimension in wall/ceilings/
floors:

Aperture size

Stack	1-level	2-level	3-level
Width, mm	600	600	600
Height, mm	300	300	370

Aperture size with optional tube for cabling

Stack	1-level	2-level	3-level
Width, mm	700	700	700
Height, mm	300	300	370

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VEO is a close, committed and attentive partner dedicated to finding the right answers to your energy-related needs.



Our decades of experience and innovative problem-solving ability are at your disposal.



We provide optimised, turnkey deliveries - complete solutions that cover the whole spectrum from preplanning to implementation and training.



The driving force behind our operations is always your success.