

VEO

VEDA 5000

low voltage switchgear

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 preplanning, 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 inhouse. 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.



Professional touch – guaranteed quality

Process reliability, personnel safety, maintenance and fault detection are essential in the distribution of electricity for industries and power plants. The fluctuating user requirements also emphasise the need for cost-effectiveness and quickly applicable, reliable solutions with prompt deliveries. Our versatile products and flexible, customer-oriented methods make the new solutions rapidly available to users.

Our teams in application engineering have significant experience and know-how in providing quality and economic efficiency. Research and development is always carried out in close co-operation with the users, engineering and consulting companies, and component suppliers. VEDA switchgear is an excellent example of quality workmanship, knowledge of customer needs and co-operation with top experts in the field. System quality is ensured by careful selection of materials and components, the provision of suitable electro-technical applications and a tested ventilation system. Personnel safety is considered paramount

and is enhanced by controlling the arc pressure, internal separation and systematic interlocking.

VEDA 5000 has been type-tested (TTA) in the Helsinki University of Technology laboratories, FIMKO and Zkusebnictvi A.S., Prague. In addition to the requirements of standard IEC 60439/61439, the tests have been extended to meet the requirements of all customer groups and national safety requirements.

VEDA 5000

- versatile
- reliable
- cost-effective
- safe
- easy maintenance

VEDA 5000

Technical solutions

Versatility

The VEDA-concept matches the needs of fieldbus-based automation solutions, using either bus connected I/O automation modules or intelligent bus connected control components.

Adaptability

Thanks to the extractable cassette system, the system can be modified according to the available space and user preferences. The spare space is also easily utilised.

Maintenance

The simple structure makes maintenance significantly faster and easier.

In the cassette systems, the cassette door can be opened and maintenance procedures, such as replacing a fuse, can be performed while the cassettes are still in operational position.



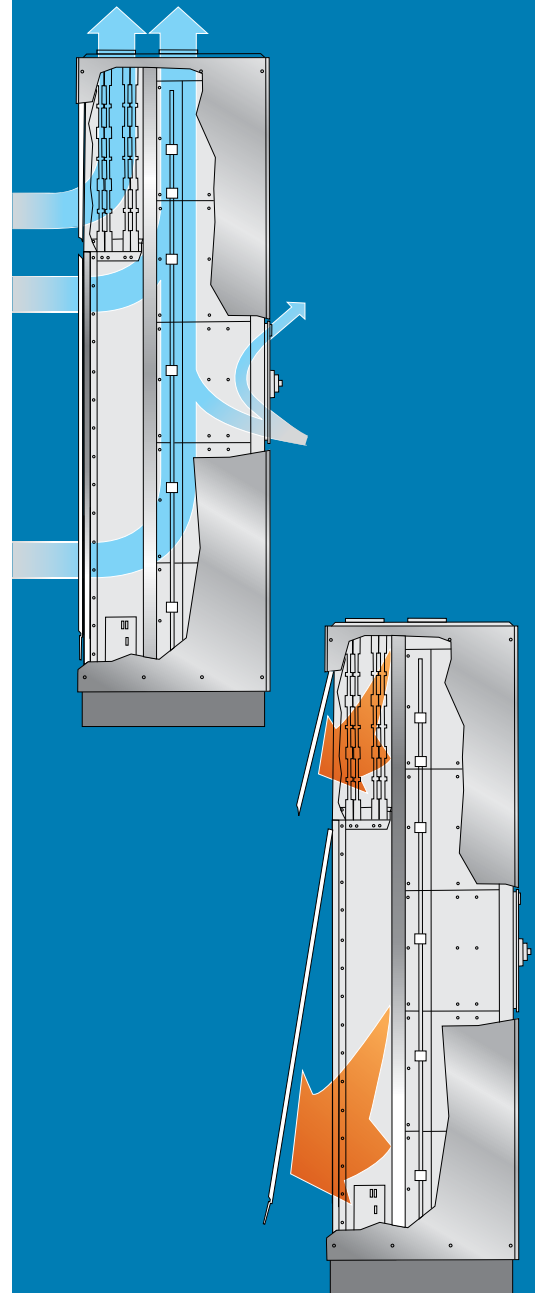
Construction

The VEDA-system comprises of lower and upper cross-members, and vertical frame members. This simplified modular structure improves cost-effectiveness of the delivery and in all stages of use.



Safety

The spreading of the arc is effectively prevented: the incoming feed unit and the main bus bars are separated from each other and other compartments. The existing effective cooling can be improved further with a ventilation cassette.

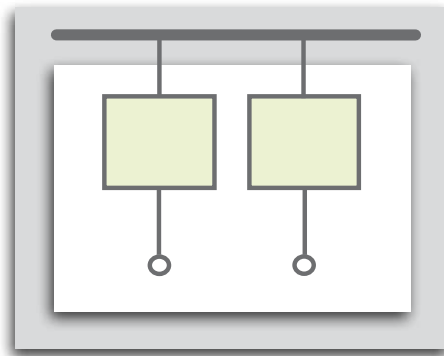


VEDA

space saving solution

The VEDA 5000 low voltage switchgear can be implemented in fuseless configurations using a space saving solution based on Form2 partitioning. This solution allows 4 to 5 moulded case circuit breakers to be placed in the same cubicle cell. The solution improves the applicability of the switchgear, for example in marine applications where space is limited.

Form2 partitioning is based on a 600 mm wide cubicle with a maximum current of 1,900 A. Cabling can be arranged from the right or from the left. The solution has passed the temperature-rise test and fulfills the set requirements. The live parts are protected against finger touching (IP2X) when the doors are open. Instead of a switch, a separate protection module can be installed in the spare cell. The standard protection class of VEDA low voltage switchgear is IP31. By adding additional protection in the doors protection class IP54 can be reached.



Internal partitioning
(EN 61439-2:2009)

Form2 partitioning

- Cubicle: width 600 mm/ maximum current 1,900 A
- Doors open: IP2X
- Protection module against touch in the spare switch position

SGS

CERTIFICATE FI 27290

Our Ref. 253072-1, 265746-1

Product	Switchgear and controlgear assembly system
Type	VEDA 5000
Trade mark	VEO
Certificate Holder/ Manufacturer	Vaasa Engineering Oy Runsonrintie 5 FI-65380 VAASA, FINLAND
Technical Information	I _n 1600 - 5000 A, U _n 690 V, I _w 100 kA max, 3/N/PE, Ik I, IP21...IP65, IK10
Other information	See the Appendix to this certificate
The product is certified according to the following standard(s)	IEC/EN 61439-1:2009 and IEC/EN 61439-2:2009
Validity	This certificate is valid until 31 January 2017 unless the standard in question has been amended or superseded with significant changes in requirements, in which case, SGS Fimko has the right to shorten the validity of the certificate based on the legislation of the European Union. This certificate includes the right to use the FI mark under the condition that changes (if any) will be checked at SGS Fimko before the product is brought onto market and that the conditions for FI certification are met.
Directive Information	The product(s) fulfils the essential safety requirements for CE conformity marking according to the Low Voltage Directive (2006/95/EC) at the date of issue of the certificate.
Date of issue	31 January 2012
Signature	SGS Fimko Ltd Sixten Löfkors Project Manager

This certificate has the responsibility of SGS FIMKO

SGS FIMKO

This certificate is issued by the company under its General Conditions for Certification Services accessible at www.sgs.com and www.fimko.com. Attention is drawn to the limitations of liability defined therein and in the Test Report here above mentioned which findings are reflected in this certificate. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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VEDA 5000

Technical data

Standards

- IEC 60439-2 / IEC 61439 parts 1-2
- BS 5486, Part 2
- DIN, VDE 0660, TEIL 500
- PSK 1801

Rated insulation voltage

- 1000 VAC

Rated operational voltage

- ≤690 VAC, 50/60 Hz

Rated nominal current (max.)

- 5000 A

Rated impulse to withstand the voltage of main circuits

- 12 kV

Short-circuit withstand strength (max.)

- Main bus bars:
 - Thermal limit current I_{cw} (1 sec) 100 kA
 - Dynamic limiting current I_{pk} 220 kA
- Distribution bus bars:
 - Thermal limit current I_{cw} (1 sec) 80 kA
 - Dynamic limiting current I_{pk} 176 kA

Arcing withstand

- 50 kA, 300 ms

Degree of protection by enclosure

- IP21-IP55, EN 60529
- Against mechanical impact, EN 62262: IK10

Support and lead-through insulators

- Ball pressure test, EN 60439-3: 185°C
- Glow-wire test, EN 69439-3: 960°C
- Tracking test, IEC 112: > 400 V

Surface finish

- SFS 5225 SP 60/1 ZnFo
- Paint thickness 60 µm
- Colour shade RAL 7032
- Shockproof effect surface

Recommended environmental classification for switchgear room

- EN 721-3K3/372/374/3B1/3C1/3S1

Dimensions mm

- Height 2250
- Depth 600, 800
- Apparatus section widths mm 400, 600, 800 and 1000
- Cable section widths mm 200, 300 and 400

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