



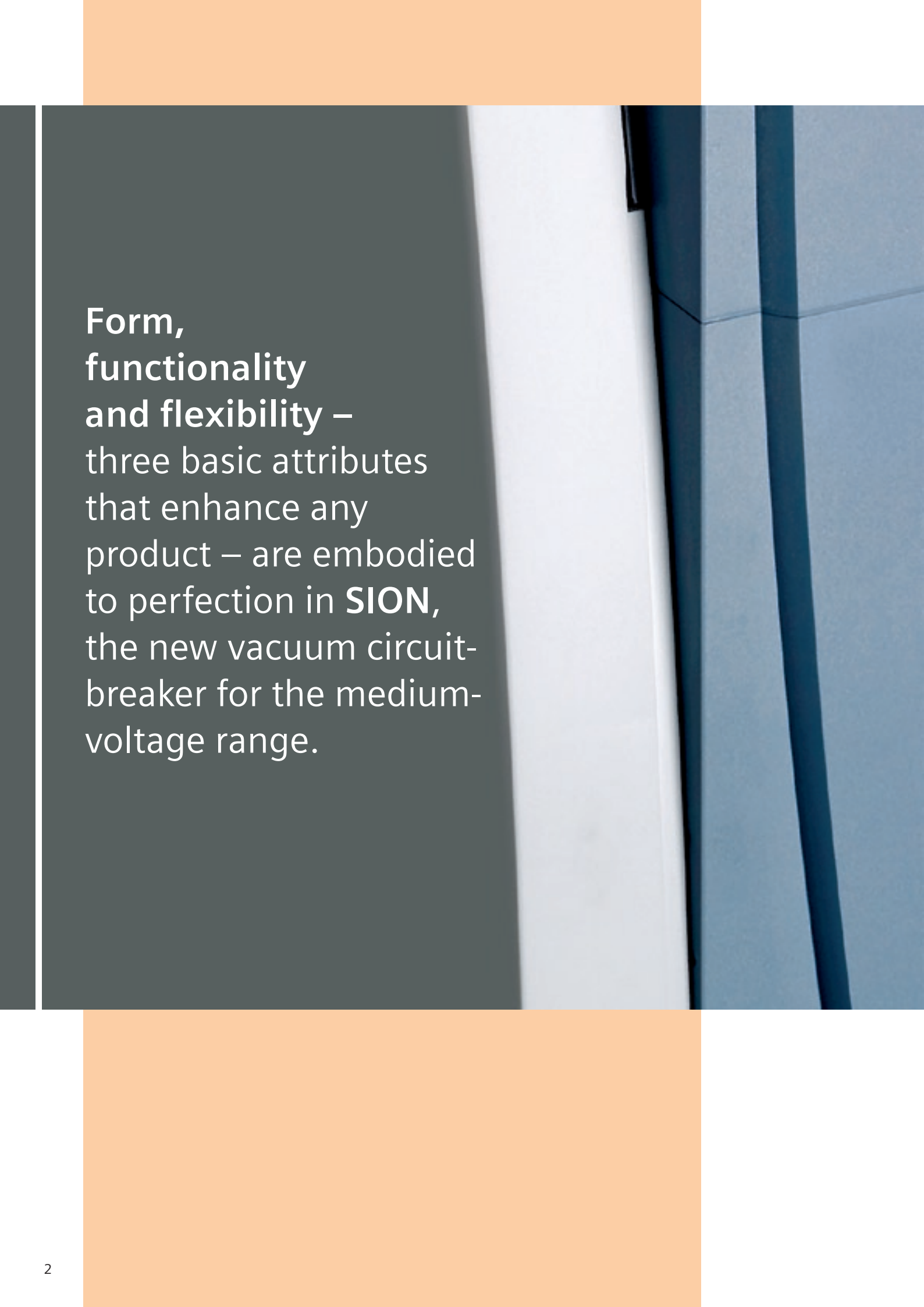
A perfect fit for every substation:

SION **vacuum** circuit-breaker.

The new line in medium voltage.

Power Transmission and Distribution

SIEMENS



**Form,
functionality
and flexibility –**
three basic attributes
that enhance any
product – are embodied
to perfection in **SION**,
the new vacuum circuit-
breaker for the medium-
voltage range.



Every innovation
begins with an idea.

The new vacuum
circuit-breaker from Siemens.
The fulfillment of a vi-

SION

We started with the idea to build a compact and multifunctional vacuum circuit-breaker: One that could be integrated quickly and easily into any switchgear panel to provide a superior solution for all switching functions in medium-voltage networks. It would include everything required for long-lasting operating and switching under short-circuit conditions.

**The realization of this idea is SION®,
the new line in medium voltage.**

Keeping it small is a sign of greatness.

Compact design.
Low overall depth.
Optimum **dimen-**

SION



SION's dimensions enable it to easily fit in any medium-voltage switchgear panel from 7.2 to 24 kV in common use today. We've applied this idea over the complete product series, including all versions for short-circuit-breaking currents up to 40 kA and rated currents up to 3150 A.

An intelligent mix of materials also sets new standards in every respect. With **SION**, we've managed for the first time to design an air-insulated vacuum circuit-breaker with a lower depth and narrower width than its fully insulated counterparts.

The low overall depth is the real key to innovative switchgear panel designs with smaller sizes. Full performance in less space is what's crucial – over a wide range of voltage levels. The **SION** circuit-breaker range has identical dimensions from 7.2 to 17.5 kV and from 12.5 to 31.5 kA, which makes it possible to use the same design for switchgear bays, helps reduce diversity and enables many synergies.

SION is extremely compact in design, with identical dimensions across a wide range of voltage levels. For you, this means innovative panel design and a reduction in the number of different switchgear bays.

Dimensions for 12 kV up to 31.5 kA and 2500 A

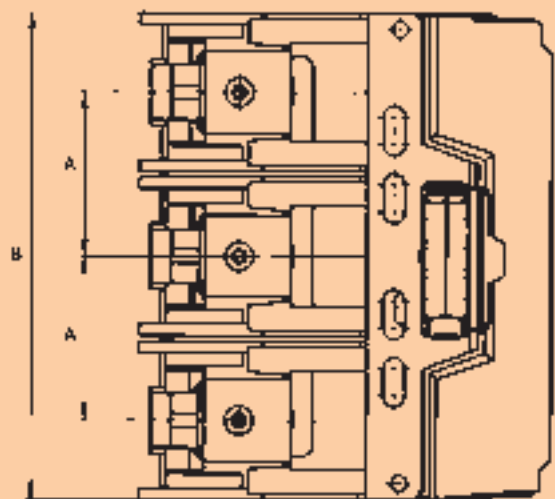
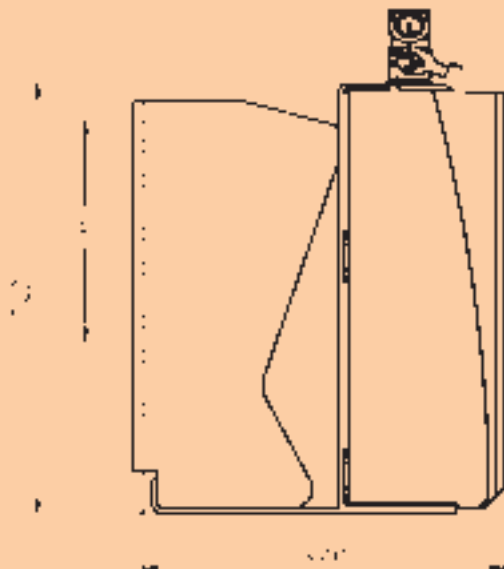
A in mm	150*	160*	210
B in mm	445	465	565
C in mm	205/275/310	205/275/310	205/275/310

A pole center distance

B width

C width across flats

* up to 1250A





Pole center distances:

With a choice of 150 mm, 160 mm, 210 mm or 275 mm, you can select the circuit breaker that fits best the switchgear bay width, allowing you to minimize adaptation work.

Widths across flats:

Which circuit-breaker is the best for the primary conductor connection? Here too, you have a choice – and you can substantially cut costs for customization.

Everything fits together.

Regardless the distances between phases or upper and lower terminal, **SION** always provides a flexible solution.

Whatever your switchgear looks like, this circuit-breaker will be a perfect match.

Installation accessories packages:

Prefabricated, coordinated and designed to fit the circuit-breaker – another way **SION** makes integration easy.

SION circuit-breaker for fixed installation



Adaptability is the sign of true strength.

Simple installation, flexible wiring.
The result of extreme **preci-**

SION

Fast, simple and cost-saving installation of circuit-breakers are obvious requirements when you're building a substation. And SION meets them all.

With a wide selection of possible pole center distances or widths across flats, the new line in medium voltage is integrable to an extremely high degree. You can solve specific problems quickly and easily with the installation accessories packages. And thanks to the flat floor area, everything stays upright during installation and transport.

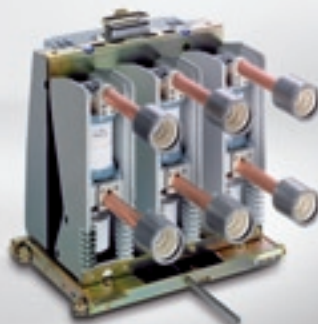
SION has been systematically designed for rapid integration, providing you with considerable flexibility in the secondary wiring and cabling. Need to accommodate a customer request for plug connector cabling at short notice? Or make a final modification in the control wiring a few days before handover? It's easy with **SION**.

The simple and safely accessible low-voltage interface gives you all the freedom you need, plus adds its own value added, especially for retrofit projects.

***SION** circuit-breaker with drawout element for insertion in the switchgear bay*



***SION** circuit-breaker with contact arms, fixed contacts and insulating bushings for connecting the circuit-breaker on the primary side to the busbars in the switchgear bay*



***SION** slide-in module completely prefabricated with circuit-breaker in cartridge, with insulating bushings and shutters – for simple integration of a circuit-breaker compartment in a switchgear bay*



The new line in medium voltage.

Functionality, quality and form are united in a perfect fu-

SION

SION comes with everything needed for full functionality, including motor drive, a full range of secondary equipment options for protection and signaling to the wide variety of connection options for control lines.

But **SION** has even more: A design that looks good in the switchgear panel and facilitates easy wiring and installation, for example with practical user prompting when opening the low-voltage interface.

Quality with no compromises

SION's quality is reflected in its total service life of up to 30,000 operating cycles, 10,000 of which are maintenance-free, and in its reliable functioning even under maximum stressing, for instance in the event of a short circuit. This reliability is based on Siemens vacuum technology for tubes which has been tried and tested for over 30 years, and on the

proven spring-stored energy drive mechanism. The innovative construction with its shell structure also provides a high level of protection against flashover to ground, despite the short distance to the side walls of a switchgear bay.



SION is the latest product of three decades of Siemens expertise in vacuum switching technology. The entire series is tailored to the needs of panel builders and users at power suppliers and industrial companies, with a clear focus on higher productivity, availability and reduced maintenance costs.





Tested and given the seal of approval

The high quality of **SION** switchgear has been proven in numerous successful material tests as summarized below:

- Type tests in accordance with IEC 62271-100 for circuit-breaker classes E2, M2, C2
- Type tests for relevant parts of the switchgear standard IEC 62271-200
- Type tests in the withdrawable module with respect to heating, dielectrics and breaking capacity – for reduced test expenditure in the switchgear panel
- Vertical burning test according UL94 for class V0
- Tests relating to the increased requirements for creepage distances and the rated short-time power frequency withstand voltage of 42 kV for the 12-kV level for specific requirements in Asia and Eastern Europe.

SION – Product range.

Type	kV	kA	A	PCD mm	150			160			210			275
				WAF mm	205	275	310	205	275	310	205	275	310	310
3AE10	7.2	16	800/1250			■	■					■	■	-
		20	800/1250			■	■					■	■	-
		25	800/1250			■	■					■	■	-
			2000		-	-	-	-	-	-	-	-	■	-
		31.5	800/1250			■	■					■	■	-
			2000/2500		-	-	-	-	-	-	-	-	■	-
		40	800–3150		-	-	-	-	-	-	-	-	■	-
3AE11	12	16	800/1250			■	■					■	■	-
		20	800/1250			■	■					■	■	-
		25	800/1250			■	■					■	■	-
			2000/2500		-	-	-	-	-	-	-	-	■	-
		31,5	800/1250			■	■					■	■	-
			2000/2500		-	-	-	-	-	-	-	-	■	-
		40	800–3150		-	-	-	-	-	-	-	-	■	-
3AE12	17.5	12.5	800/1250			■	■					■	■	-
		16	800/1250			■	■					■	■	-
		25	800/1250			■	■					■	■	-
			2000/2500		-	-	-	-	-	-	-	-	■	-
		31.5	800/1250			■	■					■	■	-
			2000/2500		-	-	-	-	-	-	-	-	■	-
		40	800–3150		-	-	-	-	-	-	-	-	■	-
3AE13	24	12.5	800/1250		-	-	-	-	-	-	-	-	■	■
		16	800–2000		-	-	-	-	-	-	-	-	■	■
		20	800–2500		-	-	-	-	-	-	-	-	■	■
		25	800–2500		-	-	-	-	-	-	-	-	■	■

PCD: Pole center distances

WAF: Width across flats

■ Fixed installation-/drawout version with accessories
 ■ Slide-in module

SION. Support when you need it:

- Advice and support in the selection of devices and installation in the switchgear bays
- Fast availability of replacement and retrofit circuit-breakers for better service quality
- Comprehensive technical support for fast, expert problem solving
- Factory visits and invitation to training courses
- CAD documentation and simple web-based product configuration for more convenience in your everyday business



Fast delivery. Professional support.

Your advantages are our **mis-**

SION

Even the delivery times for **SION** are innovative. Standard circuit-breakers are shipped within two weeks – half the usual time on the market. And if speed is vital, the circuit-breaker can be on its way to you within 48 hours by emergency express service.

The advantages for you are clear. The faster the shipment, the later the circuit-breaker version can be defined and the lower the probability that subsequent changes will be necessary after the order has been placed. In this way, you can also cut inventories and reduce tied-up capital.



In short, this product sets new standards in terms of technology, function and aesthetics – and defines a new benchmark for partnership. The new line in medium voltage offers many compelling advantages, and exceptional value for the price. See for yourself in a personal discussion.

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The information provided in this brochure contains only general descriptions or characteristics of performance which, in case of actual use, do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall exist only if expressly agreed in the terms of contract.

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