

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Power Switch Board with Bus Bar**with type designation(s)
SIVACON S8

Issued to

Siemens AG
Leipzig, Germanyis found to comply with
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards**Application :****Type approval regards system design principle only.**

Rated voltage (V)	690
Rated current (A)	Up to 7000 / 6600
Rated freq. (Hz)	50-60

This Certificate is valid until **2018-12-31**.Issued at **Høvik** on **2014-07-25**for **DNV GL**DNV GL local station: **Hamburg CMC Northern & Eastern Germany**Approval Engineer: **Nicolay Horn**.....
Marit Laumann
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed. If any person suffers loss or damage which is proven to have been caused by any negligent act or omission of the Society, then the Society shall pay compensation to such person for his proven direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question. The maximum compensation shall never exceed USD 2 million. In this provision the "Society" shall mean DNV GL AS as well as all its direct and indirect owners, affiliates, subsidiaries, directors, officers, employees, agents and any other person or entity acting on behalf of DNV GL AS.

Certificate No: **E-13432**
File No: **811.00**
Job Id: **262.1-014978-1**

Product description

Low voltage power switchboard for circuit and motor protection and control.

Type:	SIVACON S8
Rated insulation voltage voltage U_i :	1000 V AC
Rated operation voltage U_e :	690 V AC
Rated current at 35 °C / 45 °C ambient:	
Horizontal main busbar:	Up to 7000 A (35 °C) / 6600 A (45 °C) ¹⁾
Vertikal busbar for circuit breaker design:	Up to 5900 A (35 °C) / 5200 A (45 °C) ¹⁾
Rated frequency:	50-60 Hz
Enclosure class:	IP31, IP41, IP43 and IP54
Short-circuit current main bus bar:	
Peak withstand I_{pk} :	Up to 330 kA
Withstand 1 sec. I_{cw} :	Up to 150 kA
Short-circuit current vertical bus bar:	
Peak withstand I_{pk} :	Up to 220 kA
Withstand 1 sec. I_{cw} :	Up to 100 kA

1) Data given for ventilated cubicles

External dimensions: H: 2000 – 2200 mm
W: 200 – 1200 mm
D: 500 – 1200 mm (Single fronted) 1000 – 1200 mm (Double fronted)

The power switchboard to be installed /mounted according to manufacturer's installation instructions.

List of parts: See applicable drawings.

Application/Limitation

Low voltage switchboard systems of partly partitioned type for use onboard ships and mobile offshore units.

Type approval regards system design principle in accordance with IEC 61439-1 / 2. Final design and selection of equipment and components to be made in accordance with the applicable Rules for the actual case.

To be installed in an enclosure with an IP degree in accordance with DNV Rules w.r.t. location.

This type approval certificate does not replace the requirement for a DNV product certificate. Documents and drawings for the actual application as stated in the Rules Pt.4, Ch.8, Sec. 1, Table 202 except E150, shall be submitted for approval in each case by the end manufacturer.

Type Approval documentation

Technical info:

Brochure "Sivacon The low voltage distribution board that sets new standards.
8PQ9801-2AA20 Request for Type Approval.

Test reports:

As listed in approval letter MCANO381/NHORN/262.-014978-X dated 2014-06-18.

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Tests carried out

Type tests in accordance with IEC 61439-1 & 2, Internal arc test in accordance with IEC 61641. vibration test.

Marking of product

Manufacturers name plate with type and key data in accordance with DNV Rules Pt.4, Ch.8, Sec.4, A 108.

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the survey are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Survey to be performed at least every second year.

END OF CERTIFICATE