

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Low Voltage Switchgear and Control Gear Assemblies

with type designation(s)
Blokset MB401M

Issued to
Schneider Electric Industries SAS
GRENOBLE, France

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Type approval regards system design principle only.

Product approved by this certificate is accepted for installation on all vessels classed by DNV GL.

Rated voltage (V) 690
Rated current (A) up to 5500
Rated frequency (Hz) 50 - 60
Degree of protection

Issued at **Høvik** on **2019-05-22**

for **DNV GL**

This Certificate is valid until **2023-12-31**.

DNV GL local station: **Shanghai**

Approval Engineer: **Nicolay Horn**

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Trond Sjøvåg
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.



Job Id: **262.1-022110-2**
Certificate No: **TAE00001A5**
Revision No: **1**

Product description

Blokset MB401M. Low voltage power switchboard for circuit and motor protection and control.

Type:	MB 401M
Rated insulation voltage voltage U_i :	1000 V AC
Rated operation voltage U_e :	690 V AC
Rated current at 45 °C ambient:	
Main busbar:	Up to 5500 A
Vertikal busbar:	Up to 1700 A
Rated frequency:	50-60 Hz
Enclosure class:	IP22 / 32 / 44
Short-circuit current main bus bar: ¹⁾	
Peak withstand I_{pk} :	Up to 220 kA
Withstand 1 sec. I_{cw} :	Up to 100 kA
Short-circuit current vertical bus bar: ¹⁾	
Peak withstand I_{pk} :	Up to 187 kA
Withstand 1 sec. I_{cw} :	Up to 85 kA
Internal arc withstand:	85 kA / 0.5 sec

1) See comments to short circuit currents under Application/limitation.

External dimensions: H: 2200 mm
W: 600 mm
D: 600, 800 and 1100 mm

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

List of parts: See applicable drawings.

Application/Limitation

The type approval covers system design principle in accordance with IEC 61439-1/2 & IEC 60439-1 only. The manufacturing process is not included.

Equipments as circuit breakers etc. are not covered by this type approval.

Documents and drawings for the actual application as stated in the DNV GL Rules Pt.4, Ch.8, Sec. 1, Table 2 except E150, shall be submitted for approval in each case by the end manufacturer.

Vertical bus bars may be rated on the basis of the reduced short-circuit stress occurring on the load side of the respective short-circuit productive device as stated in IEC 61439-1 item 8.6.1, but not less than 60 % of the rating for the main bus bar and only for single outgoing consumers protected by a fuse or short-circuit limiting breaker without time delay.

Type Approval documentation

Technical info:

"Technical Specification Marine Switchboard Offer – Blokset MB401M

Test Report Nos.:

"State Center of Supervision Test for Electrical Safety (Zhejiang)2 report no. 1813333043 dated 2018-04-18.

"Inspection Center of Products Quality of Low Voltage Electrical Apparatus in Zhejiang Province" report no. DY14-C017CT dated 2014-03-14.

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"Zhejiang Fanggyuan Test Group Co. Ltd" report no. 140119117006, dated 2014-11-25.
STIE test report nos. AT12021 dated 2012-06-29 & AT120569 dated 2012-08-05. SEASR Institute Stock Co Ltd test report no. 12X0176-S dated 2012-06-16. The Marine Engineering and Reliability Laboratory test report no. S622-ZD-2011 dated 2012-08-05
AT06435, Beijing Institute of Structure & Environment test report for MB 301B issued Jan. 2007
AT090889, Shanghai Testing & Inspection Institute for Electrical Equipment test report for Low voltage SwitchBoard Panel Products MB301_M dated 2010.01.21

Tests carried out

Type tests in accordance with IEC 61439-1 / 2 and IEC 60439-1, internal arc test in accordance with IEC TR 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, item 1.1.7.

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.

Assessment to be performed at 2 and 3.5 year and at renewal.

END OF CERTIFICATE