

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**That the Low Voltage Switchgear and Control Gear Assemblies**

with type designation(s)  
**Blokset MB301M**

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 7300**  
**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: **TAE00001A4**  
Revision No: **1**

## Product description

Blokset MB301M. Low voltage power switchboard for circuit and motor protection and control.

<b>Type:</b>	<b>MB 301M</b>
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 7300 A <sup>1)</sup>
Vertikal busbar:	Up to 3300 A
Rated frequency:	50-60 Hz
Enclosure class:	IP22 / 32 /44
Short-circuit current main bus bar: <sup>2)</sup>	
Peak withstand $I_{pk}$ :	Up to 330 kA
Withstand 1 sec. $I_{cw}$ :	Up to 150 kA
Short-circuit current vertical bus bar: <sup>2)</sup>	
Peak withstand $I_{pk}$ :	Up to 220 kA
Withstand 1 sec. $I_{cw}$ :	Up to 100 kA
Internal arc withstand:	85 kA / 0.5 sec

1) For front access solution the max.  $I = 4480$  A

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

External dimensions: H: 2200 mm  
W: 600 - 1400 mm  
D: 500 - 1300 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 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:

Masterblock 301 Marine technical guide v1.0  
Complementary Technical Specification MB301M

Test Report Nos.:

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

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"State Center of Supervision Test for Electrical Safety" report no 150033118030 dated 2015-10-12.  
"Inspection Center of Products Quality of Low Voltage Electrical Apparatus in Zhejiang Province" report no. DY14-C017CT dated 2014-03-14.  
"Zhejiang Fanggyuan Test Group Co. Ltd" report no. 140119117006, dated 2014-11-25.  
C-Lab test reports Nos. RI\_201303278\_001 & RI\_201303280\_001 dated 2013-06-17  
STIEE's test report nos AT12-0776 dated 2009-05-01, AT13-0665 & 0928 dated 2013-04-01  
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 60439-1 / 61439-1/2, 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 GL 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 is to be performed at 2, 3.5 year and at renewal.

END OF CERTIFICATE