

# TYPE APPROVAL CERTIFICATE

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**This is to certify:****That the Generator**with type designation(s)  
**SK 225 Series (3 phase)**

Issued to

**SOGA S.p.A.**  
**Montecchio Maggiore VI, Italy**

is found to comply with

**DNV rules for classification – Ships, offshore units, and high speed and light craft****Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.**

<b>Degree of protection</b>	<b>IP23</b>
<b>Insulation class</b>	<b>H</b>
<b>Temp. class (°C)</b>	<b>F</b>
<b>Voltage (V)</b>	<b>400 / 450</b>
<b>Power (kW)</b>	<b>41.6 to 105.6</b>
<b>Frequency (Hz)</b>	<b>50 / 60</b>
<b>Speed (RPM)</b>	<b>1500 / 1800</b>

Issued at **Hamburg** on **2021-10-04**for **DNV**This Certificate is valid until **2026-10-03**.DNV local station: **Rijeka**Approval Engineer: **Maik Gagern**

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**Arne Schaarmann**  
**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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



## Product description

Type SK 225, 3 phase, 4 poles, brushless A.C. generator

Enclosure class:	IP 23
Winding insulation:	Class H
Temperature rise limits:	Class F
Voltage class:	400 / 450 V
Power class:	52 to 132 kVA
Frequency class:	50 or 60 Hz
Speed:	1500 or 1800 RPM
Ambient temperature:	50 °C

Frame size	Rated power (kVA) 50 Hz (1500 rpm)	Rated power (kVA) 60 Hz (1800 rpm)
MJBM		
SK 225 SM	52	63
SK 225 MS	64	77
SK 225 MM	75	90
SK 225 ML	85	99
SK 225 LS	101	120
SK 225 LM	110	132

Production Sites:

SOGA S.p.A. – Vicenza (Italy)  
SINCRO d.o.o. – Kukuljanovo (Croatia)

## Application/Limitation

Approved for installation onboard ships and mobile offshore units in non-hazardous areas.

The generator must be regarded as a component. The voltage regulator type “BL4 U v.4” is a part of this type approval. However, the end user / system responsible must insure, that the generator including the voltage regulator fulfills the DNV Rules Pt.4 Ch.8 Sec.5.

## Type Approval documentation

Z66136E - SINCRO - MARINE generators series - Technical description - i.01

SK 225 LM-code-114494-SerNo-1467197-type test report

SINCRO - MARINE generators series - Test programme - i.01\_03.2021

## Tests carried out

Acc. to DNV GL Class Program DNVGL-CP-0393, Edition 2015

## Marking of product

The products to be marked with:

- Manufacturer name
- Model name
- Serial number
- voltage– frequency - speed - power class (kW / kVA) - winding insulation class
- Degree of protection

## Periodical assessment

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

The main elements of the assessment are:



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- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to 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.

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE



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