



Marine & Offshore

Certificate number: 59119/A0 BV

File number: ACE6/846/1

Product code: 2592H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

LSIS CO., LTD. (CHEONAN PLANT)

CHEONAN - KOREA (REPUBLIC OF)

for the type of product

FREQUENCY CONVERTERS (Power below 50kW)

SV-IS7 series

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships

EC Code 31

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 21 Oct 2024

For Bureau Veritas Marine & Offshore,

At BV PUSAN, on 21 Oct 2019,

Chang-Uk HONG



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

The SV-IS7 series products are variable frequency drives for AC motors used in Marine and Offshore applications.

1.1 - Specifications:

| | |
|-----------------------|------------|
| Rated input voltage: | 200 - 480V |
| Rated frequency: | 50/60Hz |
| Degree of protection: | Up to IP21 |

1.2 - Approval's range:

| Type | Rated supply (V) | Number of phases | Rated output (kW) |
|-----------|------------------|------------------|-------------------|
| SV0008IS7 | 200 - 230 | 3 | 0.75 |
| SV0015IS7 | 200 - 230 | 3 | 1.5 |
| SV0022IS7 | 200 - 230 | 3 | 2.2 |
| SV0037IS7 | 200 - 230 | 3 | 3.7 |
| SV0055IS7 | 200 - 230 | 3 | 5.5 |
| SV0075IS7 | 200 - 230 | 3 | 7.5 |
| SV0110IS7 | 200 - 230 | 3 | 11 |
| SV0150IS7 | 200 - 230 | 3 | 15 |
| SV0185IS7 | 200 - 230 | 3 | 18.5 |
| SV0220IS7 | 200 - 230 | 3 | 22 |
| SV0300IS7 | 200 - 230 | 3 | 30 |
| SV0370IS7 | 200 - 230 | 3 | 37 |
| SV0450IS7 | 200 - 230 | 3 | 45 |

| Type | Rated supply (V) | Number of phases | Rated output (kW) |
|------------|------------------|------------------|-------------------|
| SV0008IS7 | 380 - 480 | 3 | 0.75 |
| SV0015IS7 | 380 - 480 | 3 | 1.5 |
| SV0022 IS7 | 380 - 480 | 3 | 2.2 |
| SV0037IS7 | 380 - 480 | 3 | 3.7 |
| SV0055IS7 | 380 - 480 | 3 | 5.5 |
| SV0075IS7 | 380 - 480 | 3 | 7.5 |
| SV0110IS7 | 380 - 480 | 3 | 11 |
| SV0150IS7 | 380 - 480 | 3 | 15 |
| SV0185IS7 | 380 - 480 | 3 | 18.5 |
| SV0220IS7 | 380 - 480 | 3 | 22 |
| SV0300IS7 | 380 - 480 | 3 | 30 |
| SV0370IS7 | 380 - 480 | 3 | 37 |
| SV0450IS7 | 380 - 480 | 3 | 45 |

2. DOCUMENTS AND DRAWINGS :

Product catalogue, dated Aug.2014.

User manual No. 10310000882, dated May.2014.

3. TEST REPORTS :

LSIS CO., LTD:

- Test report dated 23.Jan.2015.

- Tests report No. DS632-DNV205.2, dated 27.Apr.2012.

UL Korea, Ltd:

- Tests report No. 13-10054989-1/2/3-BV, dated 8.Nov.2013.

4. APPLICATION / LIMITATION :

4.1 - BUREAU VERITAS Rules and Regulations for the Classification of Steel Ships.

4.2 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**

4.3 - BUREAU VERITAS Environmental Category, **EC Code: 31**

4.4 - The equipment fulfils the EMC requirements for installation in General Power Distribution Zones.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The **SV-IS7 series products** are to be supplied by **LSIS CO., LTD.** in compliance with the type and the requirements described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **LSIS CO., LTD.** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

5.4 - For information, **LSIS CO., LTD.** has declared to Bureau Veritas the following production site(s):

LSIS CO., LTD.
#56, Samsung 4-gil, Mokcheon-eup
CHEONAN
KOREA (REPUBLIC OF)

6. MARKING OF PRODUCT :

6.1 - Trade name.

6.2 - Date of manufacture and serial number.

6.3 - Equipment type or model identification under which it was type-tested

7. OTHERS :

7.1 - It is **LSIS CO., LTD.**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate No. 40183/A0 BV issued on n 20 Mar 2015 by the Society.

*** END OF CERTIFICATE ***