



CERTIFICATE NUMBER

12-BK899049-PDA

DATE

22 June 2012

ABS TECHNICAL OFFICE

Busan Engineering Services

CERTIFICATE OF DESIGN ASSESSMENT

This is to Certify that a representative of this Bureau did, at the request of
LS IS CO., LTD. - CHEONAN PLANT - CHEONANN-SI

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

PRODUCT: **Frequency Converter**

MODEL: **SV-IP5A-2 Series**
SV-IP5A-4 Series


This Product Design Assessment (PDA) Certificate 12-BK899049-PDA, dated 22/Jun/2012 remains valid until 21/Jun/2017 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

AMERICAN BUREAU OF SHIPPING


Seouk-Young Hong

Engineer

LS IS CO., LTD. - CHEONAN PLANT

181 SAMSUNG-RI, MOKCHEON-EUP

CHEONANN-SI

CHUNGNAM 330-845

Korea, Republic of

Telephone: 82-41-550-8389

Fax: 82-41-566-8270

Email: tyryu@lsis.biz

Web: eng.lsis.biz

Product: Frequency Converter

Model: SV-IP5A-2 Series
SV-IP5A-4 Series

Intended Service:

Motor controller; Fans, Pumps etc. for Ships and Offshore Units

Description:

-Variable speed controller for asynchronous motor.(Frequency Converter)

-SV-IP5A-2 Series

SV055IP5A-2NE, SV075IP5A-2NE, SV110IP5A-2NE, SV150IP5A-2NO, SV185IP5A-2NO, SV220IP5A-2NO, SV-300IP5A-2NO

- SV-IP5A-4 Series

SV055IP5A-4NE, SV075IP5A-4NE, SV110IP5A-4NE, SV150IP5A-4NO, SV185IP5A-4NO, SV220IP5A-4NO, SV300IP5A-4NO, SV370IP5A-4O, SV450IP5A-4O, SV550IP5A-4O, SV750IP5A-4O, SV900IP5A-4O, SV1100IP5A-4OL, SV1320IP5A-4OL, SV1600IP5A-4 OL, SV2200IP5A-4 OL, SV2800IP5A-4 OL, SV3150IP5A-4O, SV3750IP5A-4O, SV4500IP5A-4O

*SV-0(xxx)IP5A- (2/4) (N/E/O/L)

xxx: Motor rating

2/4: 200V type or 400V type

N: Non keypad

E: UL Enclosed type

O: UL Open type

L: Built-in DC choke

-UL Open Type: UL open product must be mounted on the panel in a house

-UL Enclosed type1: UL enclosed type1 product can be mounted without the panel in a house

-Supply voltage range: 200~480V, 50/60Hz

-Voltage variation: 5%

-output frequency: 0~120Hz

-Temperature in operation:0~40℃

-Ambient Temperature:-10℃ ~ 40℃ (14°F ~ 104°F) (Use loads less than 80% at 50℃)

- Storage Temperature: -20℃ ~ 65℃ (14°F ~ 149°F)

-Ambient Humidity: Less Than 90 % RH Max. (Non-Condensing)

- Altitude - Vibration: Below 1,000m (3,300ft), Below 5.9m/sec² (0.6g)

-Application Site : Pollution degree 2, No Corrosive Gas, Combustible Gas, Oil Mist, or Dust

Ratings:

1. 200~230V class

Model: SV(055/075/110/150/185/220/300) IP5A-2

1)Fan or Pump load

Output rating: motor rating (5.5/7.5/11/15/18.5/22/30 kW)

Current rating (24/32/46/60/74/88/115 A)

Input rating: Voltage (3 , 200~230V (-15%~+10%))

Frequency (50/60Hz 5%)

LS IS CO., LTD. - CHEONAN PLANT

181 SAMSUNG-RI, MOKCHEON-EUP

CHEONANN-SI

CHUNGNAM 330-845

Korea, Republic of

Telephone: 82-41-550-8389

Fax: 82-41-566-8270

Email: tyryu@lsis.biz

Web: eng.lsis.biz

2) General load

-Output rating: motor rating (3.7/5.5/7.5/11/15/18.5/22 kW)

Current rating (17/23/33/44/54/68/84 A)

-Input rating: Voltage (3 , 200~230V (-15%~+10%))

Frequency (50/60Hz 5%)

2-1. 380~400V class (5.5kW~30kW)

Model: SV(055/075/110/150/185/220/300) IP5A-4

1) Fan or Pump load

-Output rating: motor rating (5.5/7.5/11/15/18.5/22/30 kW)

Current rating (12/16/24/30/39/45/61 A)

-Input rating: Voltage (3 , 380~400V (-15%~+10%))

Frequency (50/60Hz 5%)

2) General load

-Output rating: motor rating (3.7/5.5/7.5/11/15/18.5/22 kW)

Current rating

(built-in DCL type)

:(8.8/12/16/22(24)/28(30)/34(39)/44(45) A)

-Input rating: Voltage (3 , 380~400V (-15%~+10%))

Frequency (50/60Hz 5%)

2-2. 380~400V class (37kW~90kW)

Model: SV(370/450/550/750/900) IP5A-4

1) Fan or Pump load

-Output rating: motor rating (37/45/55/75/90 kW)

Current rating (75/91/110/152/183 A)

-Input rating: Voltage (3 , 380~400V (-15%~+10%))

Frequency (50/60Hz 5%)

2) General load

-Output rating: motor rating (30/37/45/55/75 kW)

Current rating: (55/75/91/110/152 A)

-Input rating: Voltage (3 , 380~400V (-15%~+10%))

Frequency (50/60Hz 5%)

2-3. 380~400V class (110kW~450kW)

Model: SV (1100/1320/1600/2200/2800/3150/3750/4500) IP5A-4

1) Fan or Pump load

-Output rating: motor rating (110/132/160/220/280/315/375/450 kW)

Current rating (223/364/325/432/547/613/731/877 A)

-Input rating: Voltage (3 , 380~400V (-15%~+10%))

Frequency (50/60Hz 5%)

2) General load

-Output rating: motor rating (90/110/132/160/220/280/315/375/450 kW)

Current rating: (183/223/264/325/432/547/613/731 A)

-Input rating: Voltage (3 , 380~400V (-15%~+10%))

Frequency (50/60Hz 5%)

Service Restrictions:

Unit Certification is not required for this product. If the manufacturer or purchaser requests an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments:

LS IS CO., LTD. - CHEONAN PLANT

181 SAMSUNG-RI, MOKCHEON-EUP

CHEONANN-SI

CHUNGNAM 330-845

Korea, Republic of

Telephone: 82-41-550-8389

Fax: 82-41-566-8270

Email: tyryu@lsis.biz

Web: eng.lsis.biz

Comments.

Not Applicable

Notes / Drawings / Documentation:

This PDA is issued based on following documents.

1. Type Approval Certificate (No. E-10114 dated 29 March 2010) with Test Report witnessed DNV (IACS member)

2. EMC Test Report (No. 5009806-M1 dated 28 February 2005 / No. 5008758M1 dated 28 February 2005 / No.

32003071 dated 3 April 2006) witnessed International Capacitors, S.A.

3. Certification of ISO 9001 (No. QMS-0260 dated 10 May 2010) witnessed Korean Standards Association

Type tests are carried out in accordance with following standards.

1. IEC 60146, 61800, 60068,

2. DNV Standard 2.4

3. UNE-EN 61800-3 for EMC Test

Term of Validity:

This Product Design Assessment (PDA) Certificate 12-BK899049-PDA, dated 22/Jun/2012 remains valid until 21/Jun/2017 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

STANDARDS**ABS Rules:**

2012 Steel Vessel Rules 1-1-4/7.7, 4-8-3/7.5 and 4-9-7/Table 9 &10

National:

NA

International:

CE, UL

Government Authority:

NA

EUMED:

NA

Others:

Manufacturer's Standards