



Marine & Offshore

Certificate number: 47522/A0 BV

File number: AP4749

Product code: 3932H

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

Heinzmann GmbH & Co. KG
Schönau (Schwarzwald) - GERMANY

for the type of product

ELECTRICAL ACTUATORS
StG 2040 and StG 2080

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships

EC Code: 33

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: 01 Feb 2023

For Bureau Veritas Marine & Offshore,

At BV HAMBURG, on 01 Feb 2018,

Dirk Hoepfner



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 electric actuators type **StG 2040** and **StG 2080** are gearless, direct acting rotary actuators with brushless permanent magnet motors with an integrated feedback cam and inductive sensor for providing an analogue feedback signal. The actuator may be optionally equipped with a return spring on the output shaft to bring the shaft to stop position in case of governor failure.

1.1 - Main characteristics:

Designation	max. Torque (boost mode)	max. Torque (steady state)	Response time (no load)	Rotation angle
StG 2040.234-SVB	5.6 Nm at 8A	3.4 Nm at 4A	<100 ms	36° or 68°
StG 2080.228-KSVB-DK	8.4 Nm at 8A	4.2 Nm at 4A	<100 ms	36° or 68°
StG 2080.21-SV	8.4 Nm at 8A	4.2 Nm at 4A	<100 ms	36° or 68°

Power supply : 24VDC nominal voltage
 Degrees of protection: IP 65
 Feedback voltage: 1.6 ~ 2.8VDC (0~100%)

2. DOCUMENTS AND DRAWINGS:

Mechanical drawings:

StG 2040.234-SVB

-512-01-012-09, revision a, dated 16.02.2016, -512-00-012-09, revision a, dated 17.02.2016

StG 2080.228-KSVB-DK

-514-80-019-07, dated 10.07.2017, -454-01-110-21, dated 10.07.2017, -454-00-110-21, revision a, dated 20.09.2016

StG 2080.21-SV

-514-00-009-00, revision h, dated 13.10.2016, -514-01-009-00, revision n, dated 10.05.2017, -504-01-013-00, revision r, dated 09.07.2014

Part lists:

StG 2040.234-SVB

-512-00-012-09_Stückliste, -512-00-012-09_SL_Rückführung

StG 2080.228-KSVB-DK

-514-80-019-07_Stückliste, -454-00-110-21_DK200_StG2080_SL_Rückführung

StG 2080.21-SV

-514-00-009-00_Stückliste, -514-00-009-00_StG2080_SL_Rückführung, -504-00-013-09_StG16-08-EMV_SL_Rückführung

Datasheets:

- ETM_DS_DKSTG_002_07_17_e, dated July 2017, -ETM_DS_STG2040/80_001_07_17_e, dated July 2017

3. TEST REPORTS:

Performance tests, Heinzmann GmbH & Co. KG:

-170324_Final_Performance_Test_DK200-StG2080_BV_witnessed, dated 04.04.2017
 -170404_Final_Performance_Test_StG2040_BV_witnessed, dated 04.04.2017
 -Prüfberichtstg2040_160931431_512-00-012-09_18VDC_witnessed, dated 04.04.2017
 -Prüfberichtstg2040_160931431_512-00-012-09_24VDC_witnessed, dated 04.04.2017
 -Prüfberichtstg2040_160931431_512-00-012-09_31,2VDC_witnessed, dated 04.04.2017
 -Prüfberichtstg2080_16091932_454-00-110-21_18VDC_witnessed, dated 04.04.2017
 -Prüfberichtstg2080_16091932_454-00-110-21_24VDC_witnessed, dated 04.04.2017
 -Prüfberichtstg2080_16091932_454-00-110-21_31,2VDC_witnessed, dated 04.04.2017

TüV SÜD Product Service GmbH:

-713114426, Rev.1, dated 01.09.2017

Kriwan Testzentrum GmbH & Co.KG:

-009224_03_G, dated 30/Jul/2009

Bureau Veritas Consumer Products Services Germany GmbH:

-ECL-EMC Test Report No.: 17-242, Version 01, dated 07.12.17
 -ECL-ENV Test Report No.: 16-072, Version 02, dated 11.Jul.2017
 -ECL-ENV Test Report No.: 17-082, Version 01, dated 07.Dez.2017

LCIE - Laboratoire Central des Industries Electriques:

-150712-709745-A, Version: 01, dated September 19, 2017

4. APPLICATION / LIMITATION:

4.1 - Bureau Veritas Rules 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: 33**

4.4 - Governors and valves to which the actuators are connected to, are to be duly approved by the society and are not covered by this type approval certificate.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above mentioned products are to be supplied by **Heinzmann GmbH & Co. KG** in compliance with the type 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 - **Heinzmann GmbH & Co. KG** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products:

**Heinzmann GmbH & Co. KG
Am Haselbach 1
79677 Schönau
GERMANY**

5.4 - Equipment is to be supplied with manual(s) for installation, use and maintenance.

6. MARKING OF PRODUCT:

- Maker's name or trademark
- Equipment type or model identification
- Date of manufacture and/or serial number

7. OTHERS:

7.1 - It is the responsibility of **Heinzmann GmbH & Co. KG** 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.

*** END OF CERTIFICATE ***