

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Governor Control System

with type designation(s)

Helenos I/II/III/V Actuators, Helenos I/II/III/IV/V Control Units

Issued to

Heinzmann GmbH & Co. KG
Schönau/Schwarzwald, Germany

is found to comply with

DNV GL 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 GL.

Type	Temperature	Humidity	Vibration	EMC	Enclosure
Helenos I/II/III/V Actuators	B	B	B	A	*
Helenos I/II/III/IV/V Control Units	B	B	A	A	*

*** Required protection according to DNVGL Rules shall be provided upon installation on board**

Issued at **Hamburg** on **2018-01-19**

for **DNV GL**

This Certificate is valid until **2019-12-06**.

DNV GL local station: **Augsburg**

Approval Engineer: **Jens Dietrich**

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Joannis Papanuskas
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: **262.1-004164-9**
Certificate No: **TAA0000195**
Revision No: **2**

Product description

Helenos Control Unit DC xxxx.2-02-00
Operating Voltage: 24V DC (12...32V DC), Degree of protection: IP00.
Base Software Version: Propulsion: 00.4.36 (fixed), 00.6.36 (master/slave),
04.0.01 (MAN & MAN licensees, mode fixed)
Generator: 00.3.36: (offset analog), 00.9.36 (offset analog/CAN, fixed),
04.0.01 (MAN & MAN licensees, mode configurable).

Actuator Units (xxxx):

Helenos I , IP55:

StG 6: xxxx=6, StG 10: xxxx=10.

Helenos II, IP65 (housing), IP00 (connections):

StG 2010-01: xxxx=2010, StG 2040-01: xxxx=2040, StG 2080-01: xxxx=2080.

Helenos III, IP44:

StG 16: xxxx=16, StG 30: xxxx=30, StG 40: xxxx=40.

Helenos IV, IP55 (housing), IP00 (connections):

for Bosch electronic actuator EDC (not covered by this type approval).

Helenos V, IP55:

StG2040-DP: xxxx=2040-DP

Application/Limitation

Helenos I applicable for combustion engines up to 1000 kW

Helenos II applicable for combustion engines up to 1000 kW

Helenos III applicable for combustion engines up to 4000 kW

Helenos IV applicable for combustion engines up to 800 kW

Helenos V applicable for combustion engines 80...2000 kW

The following documentation of the actual application is to be submitted for approval in each case:

- Reference to this Type Approval Certificate
- Functional description
- System block diagram
- Power supply arrangement (may be part of the System block diagram)
- Instrument list
- Test program for certification

The Type Approval covers hardware and software listed under Product description.

Programming/configuration to be carried out as listed in document DG 07 001-e/05-08 and FO-TL018-1.

When the type approved software is revised (affecting all future deliveries) DNV GL is to be informed by forwarding updated software version documentation. If the changes are judged to affect functionality for which rule requirements apply a new functional type test may be required and the certificate may have to be renewed to identify the new software version.

Product certificate.

Each delivery of the application system is to be certified according to Pt.4 Ch.9 Sec.1. The certification test is to be performed at the manufacturer of the application system, preferably at the engine maker integrating control&monitoring and safety system, before the system is shipped to the yard. After the certification the clause for application software control will be put into force.

Clause for application software control

All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV GL for evaluation and approval. Major changes in the software are to be approved before being installed in the computer. A Certification of Application Functions may be required for the particular vessel.

Type Approval documentation

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Kriwan 009229_01H, Kriwan 009224_01_G, Kriwan 009224_02_G, Heinzmann Power Supply Failure Test v1.01, Performance Test Helenos I II III, DC2.02, Vers. 07-09, Heinzmann Performance Test Helenos IV, 2010-02-12; RMS 1-04/07, RMS 4-03/96, Kriwan 009229_03H. Software Questionnaire RC3, 2010-06-21.
Heinzmann Control Systems For Conventional Injection with Actuators, Helenos IV DC2.02, Performance Test; Heinzmann PB20170518_DCEDDC2-02-00_PowerSupplyTests; Heinzmann PB-2016-10-04_DC162-02_Umweltpruefung ref. to Temperature Test Report e&c testlab No. 16PBU01040001; EMC test report e&c testlab, No. 16PBI040216-01. Updated manual DG 07 001-e/03-16.

Additional Test Reports 2017:

e&c testlab 16PBI040216-01; e&c testlab 16PBU01040001; Heinzmann PB-2016-10-04_DC162-02_Umweltprüfung; Heinzmann PB20170518_DCEDDC2-02-00_PowerSupplyTests; Heinzmann Helenos IV DC2.02 Performance Test, dated 2017-05-17; Heinzmann PB20171018_StG2040 Compliance Test Report; ESD Test Report e&c testlab, 17PBI030867;
Additional drawings 2017: StG 2040-DP, 512-80-010-17;
Renewal Assessment Report, DNV GL Augsburg, issued 2017-05-16.

Tests carried out

Applicable tests according to DNV GL CG-0339, edition November 2016.

Marking of product

Maker, type designation, serial number.

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the 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 this certificate.

END OF CERTIFICATE