



CERTIFICATE NUMBER 18-LD1775695-PDA  
EFFECTIVE DATE 27-Sep-2018  
EXPIRATION DATE 26-Sep-2023  
ABS TECHNICAL OFFICE London

## CERTIFICATE OF

# Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

## **GREEN INSTRUMENTS A/S**

located at

**ERHVERVSPARKEN 29, DK-9700 BROENDERSLEV, Denmark**

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** Programmable Control/Monitoring Unit

**Model** G7000

This Product Design Assessment (PDA) Certificate remains valid until 26-Sep-2023 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau of Shipping

Theodoros Chatzidakidas, Senior Engineer

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

**GREEN INSTRUMENTS A/S**

ERHVERVSPARKEN 29  
DK-9700 BROENDERSLEV  
Denmark

Telephone: +45 9645 4500

Fax: +45 9645 4501

Email: sales@greeninstruments.com

Web: www.greeninstruments.com

**Tier: 3 - Type Approved, unit certification not required**

TC

**Product: Programmable Control/Monitoring Unit**

**Model: G7000**

**Intended Service:**

ABS classed vessels and offshore installations in accordance with the listed ABS Rules and International Standards.

**Description:**

G7000 is a continuous emission monitoring system. The modular design of the system makes it possible to monitor different gases according to customer specification.

It can monitor the SO<sub>2</sub> and CO<sub>2</sub> concentrations in exhaust gas according to the requirements in Appendix 3 of the NO<sub>x</sub> Technical Code 2008 and the requirements in MEPC. 259(68) – 2015 Guidelines for exhaust gas cleaning systems.

It provides an accurate measurement of SO<sub>2</sub> in ppm, CO<sub>2</sub> in percent as well as presents the SO<sub>2</sub>/CO<sub>2</sub> ratio.

**Rating:**

Monitoring Cabinet

Enclosure: IP55

Power Supply: 230V AC 50/60 Hz

Communication: Modbus TCP/IP

**Service Restriction:**

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

**Comments:**

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

**Notes/Drawing/Documentation:**

Drawing No. 03069\_ED, G7000 - Electrical Drawing, Revision: E, Pages: 56

Drawing No. 03134, G7000 Installation Manual, Revision: 1.1, Pages: 24

Drawing No. 03135, G7000 Operation Manual, Revision: 1.4, Pages: 58

Drawing No. 05285, G7000 - Installation Layout, Revision: F, Pages: 1

Drawing No. 05292, G7000 - Component Overview, Revision: D, Pages: 1

Drawing No. 05380, G7000 - P&ID, Revision: B, Pages: 1

Drawing No. 05577, G7000 - Flang Socket f. Probe, Revision: B, Pages: 1

Drawing No. 05907, G7000 - Multigas Probe Component overview, Revision: A, Pages: 1

Drawing No. 05910, G7000 - Multigas Probe Installation Layout, Revision: 0, Pages: 1

Drawing No. 05980, G7000 - Heated Hose Installation Layout, Revision: B, Pages: 1

Drawing No. 117-27603-1, G7000 Environmental Test Report, Date: 06-Aug-2018, DANAK, Revision: 1, Pages: 92

Drawing No. 30652-15 HH, ABB Uras Multigas Analyzer Test Report, Date: 27-Nov-2015, ABB, Revision: 0, Pages: 22

Drawing No. 7P05581, G7000 Vibration Test Report for Probe, Date: 23-Aug-2017, RISE Research Institutes of Sweden AB, Revision: 0, Pages: 5

Drawing No. 8312/11, IP rating certificate for Probe, Revision: 0, Pages: 1

Drawing No. G7000 BD, G7000 Brief Description, Revision: 1.3, Pages: 10

Drawing No. G7000 PCP, G7000 Production Control Plan, Revision: 1.2, Pages: 3

Drawing No. G7000 PTR - 1, G7000 Performance Test Report, Date: Sep-2017, Green Instruments A/S, Revision: 1.8, Pages: 16

Drawing No. G7000 PTR - 2, G7000 Additional Performance Test Report, Date: 11-Dec-2017, Green Instruments A/S, Revision: 1.0, Pages: 2

**Terms of Validity:**

This Product Design Assessment (PDA) Certificate 18-LD1775695-PDA, dated 27/Sep/2018 remains valid until

**GREEN INSTRUMENTS A/S**

ERHVERVSPARKEN 29

DK-9700 BROENDERSLEV

Denmark

Telephone: +45 9645 4500

Fax: +45 9645 4501

Email: sales@greeninstruments.com

Web: www.greeninstruments.com

---

**Tier: 3 - Type Approved, unit certification not required**

---

26/Sep/2023 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:**

- Steel Vessel Rules (2018): 1-1-4/7.7, 1-1-A3 & A4, 4-8-3/1.7, 4-9-8/7, 4-9-8/13, 4-9-8/Table1
- Steel Vessels Under 90 Meters (295 Feet) in Length (2018): 1-1-4/7.7, 1-1-A3 & A4
- Facilities on Offshore Installations (2018): 1-1-4/9.7, 1-1-A2 & A3
- Offshore Support Vessels (2018): 1-1-4/7.7, 1-1-A3 & A4, 4-8-3/1.7, 4-9-8/7, 4-9-8/13, 4-9-8/Table1 and Table 2
- Mobile Offshore Drilling Units (2018): 1-1-4/9.7, 1-1-A2 & A3, 4-1-1/7.9, 4-3-1/11, 6-1-1/9, 6-1-1/13
- Steel Vessels for Service on Rivers and Intracoastal Waterways (2018): 1-1-4/7.7, 1-1-A3 & A4
- High Speed Crafts (2018): 1-1-4/11.9, 1-1-A2 & A3
- Steel Barge Rules (2018): 1-1-4/7.9, 1-1-A3 & A4

**National:**

NA

**International:**

IACS E10 Rev. 6 Oct 2014

IMO regulation MEPC 259 (68) 2015

NOx technical Code 2018 Appendix 3

**Government:**

NA

**EUMED:**

NA

**OTHERS:** TC

NA