



Marine & Offshore
Division

Certificate number: 19774/B0 BV

File number: ACM 242/02/01

Product code: 0980I

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

ERREDUE SPA

LIVORNO - ITALY

for the type of product

INERT GAS GENERATION SYSTEM

Nitrogen Generator Models GN300M, GN600M, GN900M and GN1200M

Requirements:

- BUREAU VERITAS Rules for the Classification of Steel Ships
- 1974 SOLAS Convention as amended Regulation II-2/4.5.5
- IMO Resolution MSC.98(73) FSS Code Chapter 15
- IMO Resolution MSC.367(93) - as from 1 January 2016
- IMO Resolution A.567(14)

This certificate is issued to attest that BUREAU VERITAS 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: 03 Jul 2020

For BUREAU VERITAS,

At BV VENEZIA, on 03 Jul 2015,

Sandro BRUSEGAN



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. 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 Division 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 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.

The electronic version is available at: <http://www.veristarnb.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=iynf0ugkrc>

BV Mod. Ad.E 530 October 2014

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

Nitrogen Generator Models GN300M, GN600M, GN900M and GN1200M

Design

- Device for the production of nitrogen from filtration of continuous compressed air through a molecular modular design
- Scope of supply: Nitrogen generator, process tank, feed air compressor, compressed air dryer, compressed air tank, CCR panel and bridge panel
- Unit Power Supply: AC 240-440, 60 Hz

Performance Data

Nitrogen Generator type	GN300M	GN600M	GN900M	GN1200M
Nitrogen 95% flow (Nm ³ /h)	325	625	900	1,250
Nitrogen 98% flow (Nm ³ /h)	150	400	600	600
Max. Pressure (barg)	10	10	10	10
Max. Temperature (°C)	45	45	45	45

Material Specification

Structure	Carbon steel
Piping	AISI 316L / Carbon steel
Tower PSA	Aluminium alloy

PSA means Pressure Swing Adsorption

2. DOCUMENTS AND DRAWINGS

- Nitrogen Generation system Data sheets N12DC7250 rev. 1 (GN300M), N11DC7345 rev. 1 (GN600M), N09DT2384-3 (GN900M) and N10DT2423 rev. 2 (GN1200M)
- Vendor List
- Technical description N09DT2390 rev. 1 GN900M (NB32/33)*
- Design parameter N09DT2395 rev. 0*
- PID Diagram N09FN7054 rev.1*
- Instrument list N09DC7055-0*
- Input/output list N09DC7056-1*
- General arrangement/layout N09IM6492 rev. 1, N09MA6490 rev. 1, N09MA6491 rev. 1 and N09LC2391 rev. 1*
- Electrical parts N09EL7053, N09EL7060, N09EL7061, N09MC7069, N09FN7065, N09EL7057 rev. 1, N09EL7058 (cable list) and N09EL7059 (wiring diagram)*
- Nitrogen Tower N09MA6494 rev. 0 and N06SDC5698 rev. 1*
- Manual N09DT2390 rev. 4 GN900M (NB32/33)*

** Drawings and documentation are typical referring to BV-classed ships NB32/33 built in Turkey.*

No departure from the above documents shall be made without the prior consent of the Society. The manufacturer must inform the Society of any modification or changes to these documents and drawings.

3. TEST REPORTS

3.1 Functional testing, performance final tests, assembly final tests, electrical safety testing acc. to BV Rules performed at manufacturer's location and on-board BV-classed ships NB32/NB33 built in Turkey. The tests were carried out on a model GN900M representing all the range of nitrogen generator systems.

3.2 Test reports

- Inspection reports N° 1032805GEN07/G5650/SB and N° 1032805GEN07/G5651/SB dated 18/10/2007 issued by the Society.
- Test reports N° 475/07 dated 12/09/2007 and N° 476/07 dated 09/10/2007 issued by the manufacturer and witnessed by a Society surveyor.
- Testing electricity safety reports CEI EN 60204 issued by the manufacturer and reviewed by a Society surveyor.
- EMC type test reports acc. to the certificate list (job 700056/60).

4. APPLICATION / LIMITATION

4.1 Approved as nitrogen generator system for the purpose of producing inert gas for ships having to comply with SOLAS 74 Convention as amended and for ships having the additional class notation **IG**.

4.2 Following parts are out of scope of approval

- Nitrogen buffer tank (capacity)
- Cooling water pump (capacity and power)
- Compressors (capacity and power)
- Air dryers (capacity and power)

4.3 The oxygen analyser is to be provided with a type approval certificate.

4.4 The nitrogen generator system is not to be installed in hazardous area.

4.5 The supplier supplying the ship will have to comply with the Rules and the applicable regulations acceptable by the National Authorities of the country in which the ship is registered with respect to the nitrogen generator system. The supplier shall make available its instruction manual for installation, use and maintenance in the language required by the Ship's Flag Administration.

4.6 All the equipment is to be installed on board and tested under working conditions to the satisfaction of the Society's surveyor.

5. PRODUCTION SURVEY REQUIREMENTS

5.1 The products are to be supplied by **ErreDue S.p.A.** in compliance with the type and the requirements described in this certificate. This type of product is within the category IBV of Bureau Veritas Rule Note NR320.

5.2 Inspections acc. to item D15 of BV NR 266 DT R03 E December 2014 to comply with.

5.3 BV Product certificate is required.

Place of production

ErreDue S.p.A.
Via G. Gozzano, 3
57121 LIVORNO
ITALY

6. MARKING OF PRODUCT

Each nitrogen generator system shall be clearly and indelibly marked with the following information:

- Manufacturer's name or logo
- Type designation
- Reference to IMO testing standard
- Society's brand as relevant

7. OTHERS

This approval is given on the understanding that the manufacturer will accept full responsibility for informing shipbuilders or their sub-contractors of the proper method of fittings and general maintenance of the nitrogen generator system and of the conditions of this approval.

This certificate supersedes the Type Approval Certificate No. 19774/A0 BV issued on 20/08/2009 by the Society.

***** END OF CERTIFICATE *****