



CERTIFICATE NUMBER 22-2234297-PDA

EFFECTIVE DATE 24-March-2022

EXPIRATION DATE 23-March-2027

ABS TECHNICAL OFFICE Singapore Engineering Services

## CERTIFICATE OF

# Product Design Assessment

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

## **NORIS AUTOMATION GMBH**

located at

**MUGGENHOFER STRASSE 95, D-90429 NUERNBERG, GERMANY**

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 Diesel Engine, Safety System**

**Model N3000-SAP-x/ (G)KN3xxx**

This Product Design Assessment (PDA) Certificate remains valid until 23-March-2027 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

Vibin Chandrabose, 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

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**Tier: 2 - PDA Issued**

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**Product:** Diesel Engine, Safety System

**Model:** N3000-SAP-x/ (G)KN3xxx

**Endorsements:**

### Intended Service:

Safety System for Diesel Engines.

### Description:

System N3000-SAP-x/ (G)KN3xxx consisting of PCBs:

- I/O unit and power supply SA673-1G,
- Local emergency stop button SA674-1G,
- Logic & LED unit SA675-1G,
- Booster Unit SA677-xxG.

### Rating:

Power supply: 18...78V DC

### Service Restriction:

1. Unit Certification is required if it is incorporated in a Category II or Category III system as detailed in 4-9-3/7.1 and 4-9-3/Table 1 of ABS Rules for Building and Classing Marine Vessel Rules (2022).
2. Unit Certification is to be carried out at the plant of manufacture or during Factory Acceptance Test of the overall system. Tests and approval are for hardware only.
3. 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:

1. The specific functional and operational arrangements are to be separately approved for each particular application.
2. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

### Notes/Drawing/Documentation:

Drawing No. PB00-101\_2020-03\_LTD, Type Approval - Set List of Technical Documents, Revision: 1, Pages: 2  
TÜV Rheinland LGA Test Report No. PB00-101\_2020-03, N3000-SAP\_Type\_Approval\_Product-Test-Report dated 28/04/2020, Revision: 1, Pages: 19

Drawing No. 58.034.211.1, Safety System N3000-SAP-5, Revision: 1, Pages: 1

Drawing No. 58.034.211.2, Safety System N3000-SAP, Revision: 1, Pages: 1

Drawing No. I609E\_V1-56, N3000-SAP Safety System Description, Revision: 1, Pages: 45

Drawing No. I619E\_V106, Amplifier Relay SA677, Revision: 1, Pages: 10

Drawing No. NMS-KD-0039-EN\_V01.00, N3000-SAP Quick User Guide, Revision: 1, Pages: 12

Drawing No. HG-N3000-SAP-5\_g, N3000-SAP-5 Assembly Drawing, Revision: 1, Pages: 1

Drawing No. SL1157-1\_1, N3000-SAP-5 BoM, Revision: 1, Pages: 2

Drawing No. SA673-1\_f\_abRev\_I, Power Supply – int. interface Schematic, Revision: 1, Pages: 7

Drawing No. SA673-1G\_j, Interface Board of N3000-SAP Assembly Drawing, Revision: j, Pages: 2

Drawing No. SA674-1, Emergency Stop Button System Schematic, Revision: 1, Pages: 1

Drawing No. SA674-1G\_a, Push Button Adaptor EM Stop Assembly Drawing, Revision: a, Pages: 1

Drawing No. SA675-1\_f\_abRev\_G, Emergency Stop Logic Schematic, Revision: 1, Pages: 8

Drawing No. SA675-1G\_g\_RevH, Logic & Signal Board N3000-SAP Assembly Drawing, Revision: h, Pages: 2

Drawing No. SA677-2\_a1, Booster for mag. valve output Schematic, Revision: 1, Pages: 1

Drawing No. SA677-2G\_b, Booster for mag. valve output Assembly Drawing, Revision: b, Pages: 1

Drawing No. SL852-2, SA677 Booster for SHD output BoM, Revision: c, Pages: 3

Drawing No. SL1155-1\_m, SA673-1G Interface & Power Supply Board BoM, Revision: m, Pages: 17

Drawing No. SL1156-1, SA675-1G Logic & LED-Board BoM, Revision: 7, Pages: 12

Drawing No. 23, FMEA für N3000-SAP und Sicherheitssystem LESS Version N3000-SAP (German), Revision: 1, Pages: 8

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Drawing No. NMS-PD-0036-4-en\_V01.01, FMEA for LESS, Revision: 1, Pages: 9

Drawing No. I610E\_V1-50, N3000-SAP\_Software Revision, Revision: 1, Pages: 26

Drawing No. QSP13.101\_V1.1, QS-Plan\_N3000, Revision: 1, Pages: 21

Drawing No. 01\_100\_130057, NORIS\_DIN EN ISO 9001\_E, Revision: 1, Pages: 2

Noris Test Report No. 080630, Test Report, Environmental dated 11/12/2006, Revision: -, Pages: 10

Noris Test Report No. 080630\_V, Test Report, Vibration dated 06/12/2006, Revision: -, Pages: 4

TÜV Rheinland LGA Test Report No. 21146389-001, Test Report, Needle Flame dated 19/01/2010, Revision: -, Pages: 4

TÜV Rheinland LGA Test Report No. 261928rp1, Test Report, EMC dated 15/01/2007, Revision: -, Pages: 36

TÜV Rheinland LGA Test Report No. 261928rp2, Test Report, EMC, 15/01/2007, Revision: -, Pages: 32

TÜV Rheinland LGA Test Report No. 261928rp3, Test Report, EMC, 15/01/2007, Revision: -, Pages: 37

TÜV Rheinland LGA Test Report No. 261928rp4, Test Report, EMC, 15/01/2007, Revision: -, Pages: 32

**Terms of Validity:**

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**STANDARDS**

**ABS Rules:**

2022 Rules for Conditions of Classification 1-1-4/7.7, 1-1-A3 and A4, which covers the following:

2022 Rules for Building and Classing Marine Vessel Rules: 4-9-3/3, 4-9-3/5, 4-9-3/7, 4-9-3/9, 4-9-3/11.1, 4-9-9/7, 4-9-9/13, 4-9-9/TABLE 1

2022 Rules for Conditions of Classification - Offshore Units and Structures 1-1-4/9.7, 1-1-A2 and A3, which covers the following:

2022 Rules for Building and Classing Mobile Offshore Units: 4-3-4/5

2022 Rules for Conditions of Classification - Light and High Speed Craft 1-1-4/11.9, 1-1-A2 and A3, which covers the following:

2022 Rules for Building and Classing High Speed Crafts: 4-7-8/3, 4-7-8/7.1, 4-7-8/9, 4-7-9/15, 4-7-9/TABLE 9

**National:**

NA

**International:**

NA

**Government:**

NA

**EUMED:**

NA

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**OTHERS:**

NA