



CERTIFICATE NUMBER
EFFECTIVE DATE
EXPIRY DATE
ABS TECHNICAL OFFICE

25-0234951-PDA
08-Jul-2025
07-Jul-2030
Hamburg Engineering Department

CERTIFICATE OF Product Design Assessment

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

KTR SYSTEMS GMBH

located at

CARL-ZEISS STR. 25, , D-48432 RHEINE, 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.

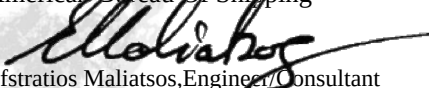
Product: Couplings
Model: RADEX-N NANA, Size 25 to 338
RIGIFLEX-N A, Size 35 to 408
Endorsements:
Tier: 5 - Unit Certification Required

This Product Design Assessment (PDA) Certificate remains valid until 07/Jul/2030 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


Efstratios Maliatsos, Engineer/Consultant

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)

KTR SYSTEMS GMBH

CARL-ZEISS STR. 25
D-48432 RHEINE
Germany
Telephone: +49-5971-798-0
Fax: +49-5971-798-698
Email: mail@ktr.com
Web: www.ktr.com

Tier: 5 - Unit Certification Required

Product: Couplings
Model: RADEX-N NANA, Size 25 to 338
RIGIFLEX-N A, Size 35 to 408

Endorsements:

Intended Service:
For marine auxiliary drives.

Description:
RADEX-N NANA and RIGIFLEX-N A are torsionally stiff flexible steel laminae couplings. They are able to compensate for shaft misalignment, for example caused by thermal expansion, etc.

Rating:
RADEX-N NANA: 25 - 338 - Nominal Torque: 60 - 280000 Nm
RIGIFLEX-N A: 35 - 408 - Nominal Torque: 130 - 280000 Nm

For further details please refer to the attachment and the KTR catalogues.

Service Restriction:
1. Unit Certification is required for this product based on application as per 4-1-1/Table 2 of the ABS Marine Vessels Rules.
2. 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.
3. Couplings for generator set applications are to be capable of absorbing short time impact torque due to electrical short-circuit conditions up to six (6) times the nominal torque.
4. Use of couplings at ambient temperatures at or below -18 °C require special impact testing.

Comments:
1. The Feather Key is not supplied by KTR System GmbH and hence not in the scope of this PDA.
2. Toughness test must be carried out to meet the requirements specified in 2025 MOU 6-1-9/Table 1.
3. Coupling bolts will be accepted on the basis of the material manufacturer's certified test reports and a satisfactory surface inspection and hardness check witnessed by the Surveyor. Coupling bolts manufactured to a recognized bolt standard will not require material testing.
4. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
5. Couplings for generator set applications are to be capable of absorbing short time impact torque due to electrical short-circuit conditions up to six (6) times the nominal torque.

Notes/Drawing/Documentation:
Drawing No. PDA_OnlineApplicationRequest, PDA_OnlineApplicationRequest, Revision: -, Pages:
Drawing No. 20250225-DeclarationOfConformity, 20250225-DeclarationOfConformity, Revision: -, Pages:

----- Drawings as of 20-1961525-PDA -----

Drawing No. 10090en000001, steel lamina properties, Revision: -, Pages: -
Drawing No. 57180en000000, ATEX RADEX H, Revision: -, Pages: -
Drawing No. 57480en000000, ATEX RIGIFLEX N, Revision: -, Pages: -
Drawing No. Cert-GOST-R, RU GOST certificate, Revision: -, Pages: -
Drawing No. EAC_EX-TR-CU-012-Couplings, RU Ex certificate, Revision: -, Pages: 6
Drawing No. RADEX-N 136-338 Zeichnungen, None 4, Revision: -, Pages: -
Drawing No. RADEX-N 25-135 Zeichnungen, None 2, Revision: -, Pages: -
Drawing No. RIGIFLEX-N 166-408 Zeichnungen, None 3, Revision: -, Pages: -
Drawing No. RIGIFLEX-N 35-160 Zeichnungen, None 1, Revision: -, Pages: -

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Tier: 5 - Unit Certification Required

Drawing No. Technial inquiry, email of May 4th technical responce, Revision: -, Pages: -
Drawing No. certificate_bv_14001_en, ISO certificate, Revision: -, Pages: -
Drawing No. certificate_bv_9001_en, ISO document, Revision: -, Pages: -
Drawing No. example-drw-M 797194, Drrawing example, Revision: -, Pages: -
Drawing No. overview, overview, Revision: -, Pages: -
Drawing No. overview 1, overview 1, Revision: -, Pages: -
Drawing No. proof of strength__RADEX-N_couplings_04-2020__ABS, calculation 1, Revision: -, Pages: -
Drawing No. proof of strength__RIGIFLEX-N_couplings_04-2020__ABS, calculation 2, Revision: -, Pages: -
Drawing No. steellaminar couplings, catalog RADEX and RIGIFLEX, Revision: -, Pages: -

Terms of Validity:

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STANDARDS

ABS Rules:

2025 Rules for Conditions of Classification: 1-1-4/7.7, 1-1-A3 and A4, which covers the following:
2025 Rules for Building and Classing Marine Vessels: 4-1-1/Table 2, 2-3-2/9, 4-3-2/1.1, /1.5, /3.1, /3.7, /5.1, /5.3, 5.19, 4-3-5/1.3, 1.5, 3.1, 3.3, 5.7.3.

2025 Rules for Conditions of Classification - Offshore Units and Structures: 1-1-4/9.7, 1-1-A2 and A3,
2025 Rules for Building and Classing Offshore Units: 6-1-4/1, 6-1-4/3, 6-1-4/Table 1, 6-1-9/Table 1

National:

NA

International:

NA

Government:

NA

EUMED:

NA

OTHERS:

NA