

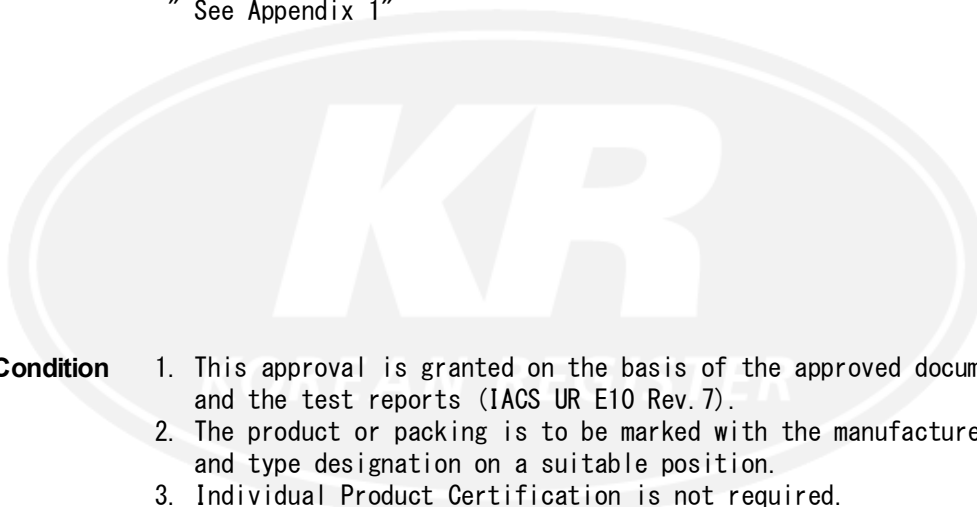


Type Approval Certificate

[Measuring Converter]

Initial Approval 23 June 2017
Manufacturer NORIS Automation GmbH
 Friedrich-Barnewitz Strasse 10, D-18119 Rostock, Germany
Product Description Type : NORISPEED

“ See Appendix 1”



Approval Condition

1. This approval is granted on the basis of the approved documentation and the test reports (IACS UR E10 Rev. 7).
2. The product or packing is to be marked with the manufacturer's name and type designation on a suitable position.
3. Individual Product Certification is not required.

THIS IS TO CERTIFY that the above-mentioned product has been approved in accordance with the relevant requirement of this Society's Rules and / or of the recognized standards as follows.

Pt. 6, Ch. 2, Art. 301 of the Rules for Classification, Steel Ships.

This Certificate is valid until 22 June 2027

Issued at Busan, Korea on 20 October 2022



This certificate is signed electronically in accordance with IMO FAL.5/Circ.39/Rev.2. Validation and authentication of the certificate can be confirmed from "<http://e-cert.krs.co.kr>" by using the tracking No(ME22030442724) and certificate No.(HMB27973-AE002).



KOREAN REGISTER

*General Manager of
Marine & Ocean Equipment Team*

Note :

1. This certificate will be valid subject to complying with the approval conditions described on the certificate and/or on the Rules of this Society.
2. This certificate will be invalid from the expiry date aforementioned unless the extension or renewal has been granted to the applicant or the manufacturer.
3. Any significant modifications or changes in design or construction to the above product without approval from this Society will render this certificate invalid.
4. Should the specified rules, regulations or standards be amended during the validity of this certificate, the product is to be re-approved by this Society in accordance with the requirements as amended.

Product Description and/or Approval Condition

Date of Issue : 20 October 2022

A. Product Description:

Measuring Converter (Type: NORISPEED) converts the frequency proportional to the speed into standard signals (voltage or current) and shows it on the display.

1. Main Characteristics

- Power supply : 24V DC
- Input : Pick-up with PNP, NPN or push-pull output max. 50 mA
Measuring range : 1~12,000 Hz
- Output : 0...5V, 0...10V, 2...10V, +/-5V, +/-10V DC
0...20mA, 4...20mA
6 relay outputs max. 30V DC/2A
- Degree of protection : IP40

2. Documents and Drawings

- 090.004.03.100, 090.004.03.400, 090.004.03.500
090.004.03.200.A, 090.004.03.201.B, 090.004.03.202.A,
090.004.03.203.C, 090.004.03.204.A, 090.004.03.205.A
- SAR33-G Rev. 244, SL33-g_V105
- NAR-PD-0105-2-en_V100_NORISPEED_Hardware_Description,
NAR-PD-0105-3-en_V200_NORISPEED_Software_Description,
NAR-PD-0105-4-en_V105_NORISPEED_Revision_Outline
- NAR-KD-0105-1-en_V109_NORISPEED_UserManual
- FMEA_NORISPEED Rev. e

3. Test Reports

- NORIS Automation GmbH
- NAR-PB-0105-1-en_V102_NORISPEED_Product Test Report
 - NAR-PB-0105-2-en_V101_NORISPEED_Test Report_6GHz
 - TTBMP11-001_NAR Ver.01

- Teseq GmbH
- D/11/3863/07

- TUV Rheinland
- 3044390 030
 - E 5.664 Part C / 3031766

- AMTEK
- D/20/4791/02 dated 2021-09-29

< End of Certificate >