TYPE APPROVAL CERTIFICATE

Certificate no.:
TAA0000101
Revision No:
2

This is to certify:

that the Measurement Converter

with type designation(s)
Trip Amplifiers 4131; Programmable Electronic Transmitters 5114, 5115, 5116, 5104, 5105, 5331, 5333, 5334, 5335, 5337, 5343, 4104, 4114, 4116

issued to
PR electronics A/S
Rønde, Midtjylland, Denmark

is found to comply with
DNV rules for classification – Ships, offshore units, and high speed and light craft

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Location classes:

Temperature	**D**
Humidity	**B**
Vibration	**A, B***
EMC	**B**
Enclosure	**Required protection according to relevant rules shall be provided upon installation on board**

*** B for 5331, 5333, 5334, 5335, 5337 and 5343**

Issued at **Høvik** on **2026-09-21**

This Certificate is valid until **2031-12-31**.
DNV local unit: **Denmark CMC**

Approval Engineer: **Urszula Maria Starowicz**

for **DNV**

This document has been digitally signed and will therefore not have handwritten signature

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

Trip Amplifiers: 4131
Programmable Electronic Transmitters: 5104, 5105, 5114, 5115, 5116, 5331, 5333, 5334, 5335, 5337, 5343, 4104, 4114, 4116

Place of manufacture

PR electronics A/S
Lerbakken 10, 8410 Rønde, Denmark

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Type Approval documentation

- Ring binder containing:
    1. Data sheet
    2. Forwarding letter
    3. Drawing 2231-1004
    4. List of components
    5. Card layout, component arr.
    6. Datasheet components
    7. Test specification
    8. Labels
    - Test records 2231/5114 dated 2003-02-14
    - Vibration test report: Delta E 500 224 dated 2002-04-02

Extension 2004:
- Ring binder containing:
    1. Data sheet
    2. Manual
    3. Drawings/ schematic diagrams
    4. Part list
    5. PCB layout, Component Location, PCB specification
    6. Test setup
    7. Test Test report
    8. Labels
    9. Application for Type Approval
    10 Certificates
    11 Revision Reports
    12 Correspondence

- Test record of 53xx dated 2004-07-09
- Vibration test report: Delta E 502021 dated 2002-04-02

Extension 2006:
- Instruction pamphlets
- Test Record of 4116 dated 2006-02-02
- Test Record of 5116 dated 2006-02-02
- Vibration Test Report: Danak-198220 dated 2006-01-11

Renewal 2010:
- Design drawing set 5335-1-12 dated 2009-07-10

Renewal 2012:
- Instruction pamphlets 5331V112-UK, 5333V110-UK, 5334V107-UK, 5335V114-UK, 5337V100-IN, 4104V100-UK
- Product data sheet 4104Y100-UK (1223)
- Design drawing set 5335-1-23A dated 2012-02-08
- Design drawing set 4104-1-03 dated 2012-08-29
- 4104 Acceptance Test Report V2R0 dated 2012-09-06
- Vibration Test Report DANAK-19/12312 dated 2012-08-09

Renewal 2021:

- EMC test report: 121-27927-1 Rev.A dated 2021-07-07
- EMC test report: 121-23384-1 dated 2021-06-01
- Dry heat test Report: 121-28169-1 dated 2021-06-23
- Test report: DANAK-19/17343 dated 2017-01-20

Type approval assessment report for TAA0000101, DNV Denmark dated 2026-09-18

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.

Marking of product

The products to be marked with:
- manufacturer name
- model name
- serial number
- power supply ratings

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE