



# TYPE APPROVAL CERTIFICATE

Certificate No:  
**TAE000027A**  
Revision No:  
**1**

## This is to certify:

**That the Transformer**

with type designation(s)  
**interMARINE ITR**

Issued to

**Intertrafo Oy**  
**TURKU, Finland**

is found to comply with

**DNV rules for classification – Ships, offshore units, and high speed and light craft**  
**DNV class programme DNV-CP-0394 – Type approval – Transformers - power and measurement**

## Application :

**Products approved by this certificate are accepted for installation on all vessels classed by DNV.**

<b>Rating (kVA)</b>	<b>0.05/0.1/0.15/0.2/0.25/0.3/0.4/0.5/0.63/0.75/0.8/1/1.6/2.4</b>
<b>Primary voltage (V)</b>	<b>up to 690</b>
<b>Secondary voltage (V)</b>	<b>up to 690</b>

Issued at **Høvik** on **2023-04-26**

This Certificate is valid until **2027-08-16**.

for **DNV**

DNV local unit: **Finland CMC**

Approval Engineer: **Nicolay Horn**

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**Frederik Tore Elter**  
**Head of Section**

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 300,000 USD.



## Product description

1-phase isolation transformer for distribution and ship supply in marine environments.

Rated Power (kVA):	0.05/0.1/0.15/0.2/0.25/0.3/0.4/0.5/0.63/0.75/0.8/1/1.6/2.4
Primary voltage (V):	Up to 690
Secondary voltage (V):	Up to 690
Rated frequency (Hz):	47 – 63
Degree of protection:	IP 00
Environmental class:	E0
Ambient temperature:	45°C
Temperature class:	B (130°C) & F (155°C)
Cooling:	AN, Air Natural

## Application/Limitation

End user is responsible for correct IP protection / enclosure wrt. location.

## Type Approval documentation

### Tests carried out

Tests are performed in accordance with DNV-CP-0394:

- Temperature test at full load
- Measurement of winding resistance
- Measurement of voltage ratio and vector
- Measurement of no-load loss and current
- Measurement of short circuit impedance and load loss
- Dielectric tests
- Measurement of voltage drop
- Measurement of insulation. resistance
- Vibration test

## Marking of product

Each power transformer shall be provided with nameplate giving the following information:

- make, type, serial no.
- performance standard
- rated values for: output apparent power, voltage(s), frequency, current(s)
- thermal classification of insulation
- IP code of enclosure and termination box
- vector group of windings
- short circuit impedance value
- total mass.

## Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine tests (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

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

END OF CERTIFICATE