Certificate no.:
TAA00003C4

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Measurement Converter

with type designation(s)
Tachometer series SpeedSys Tx0 – SpeedSys T10, SpeedSys T20, SpeedSys T30

issued to
Istec International B.V
Lisse, Zuid-Holland, Netherlands

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	**B**
Humidity	**B**
Vibration	**A**
EMC	**A**
Enclosure	**A / IP20**

Issued at **Høvik** on **2023-12-08**
This Certificate is valid until **2028-12-07**.
DNV local unit: **Netherlands CMC**

for **DNV**

Approval Engineer: **Ståle Sneen**

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

SpeedSys Tx0 is a line of products for speed monitoring and switching on rotating machinery. The Tx0-series converts signals from speed sensors to processed outputs. The series includes single, dual, and triple channel devices.

Interfaces	**SpeedSys T10 (Model: SSYT10-000-003)**	**SpeedSys T20 (Model: SSYT20-000-003)**	**SpeedSys T30 (Model: SSYT30-000-003)**
Sensor inputs	1x sensor input	2x sensor input	3x sensor input
Digital inputs	1x digital input	2x digital input	3x digital input
Relay outputs	1x DPST 1x SPST	2x DPST 2x SPST	3x DPST 3x SPST
Analog outputs	1x analog output	2x analog output	3x analog output
Frequency outputs	1x frequency output	2x frequency output	3x frequency output
Power supply	1x power supply	2x power supply	3x power supply
Modbus	1x Modbus TCP	1x Modbus TCP	1x Modbus TCP

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.

Application/Limitation

The units are tested and approved for nominal power supply 24 Vdc.

Type Approval documentation

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