



# BIRO KLASIFIKASI INDONESIA

## SERTIFIKAT PERSETUJUAN TIPE

### *Type Approval Certificate*

No. 00082.19.SP00477

No. Persetujuan : 00337TA19  
*No. of approval*

Tanggal persetujuan : 03 October 2019  
*Date of approval*

Dengan ini dinyatakan bahwa produk di bawah ini telah memenuhi dan disetujui berdasarkan  
*This is to certify that the following products has been complied and approved in accordance with*

persyaratan dari Peraturan dan/atau Standard yang tercantum dibawah in  
*requirements of the Rules and / or Standards listed below*

Produk : **FREQUENCY CONVERTER**  
*Product*

Pembuat : **VACON, Ltd**  
*Manufacturer* Runsorintie 7, 65380 Vaasa, Finland

Tipe produk : **NX Series**  
*Type designation*

Standard persetujuan : Rules for Electrical Installations (Part. 1, Vol. IV)  
*Approval standards* Rules for Approval of Manufacturers and Service Suppliers (Part. 1, Vol. XI)  
Guidance for The Approval and Type Approval of Materials and Equipment  
for Marine Use (Part. 1, Vol. W)

Sertifikat ini berlaku hingga tanggal yang ditetapkan di bawah dengan syarat pemeriksaan periodik  
*This certificate remains valid until the date set below provided that periodical surveillances*

dilakukan tepat waktu dan setiap perubahan atau modifikasi pada produk diberitahukan ke BKI.  
*are carried out on time and any alterations or modifications to the approved product notified to BKI.*

Sertifikat ini berlaku sampai dengan : **02 October 2024**  
*This certificate is valid until*

Jakarta, 22 October 2019

a.n. Direktur Operasi  
Kepala Departemen Operasi Klasifikasi  
*a.n. Operation Director*  
*SVP of Classification Operation Dept.*



*Totok Achmad Sugiharso*  
**TOTOK ACHMAD SUGIHARSO**

Catatan : Sertifikat ini terdiri dari 4 (empat) halaman  
*Note This certificate is consist of 4 (four) pages*

Jika Peraturan atau Standard yang digunakan dalam proses persetujuan mengalami perubahan pada saat sertifikat ini masih berlaku, maka produk harus dilakukan persetujuan ulang sebelum dapat dipasang dikapal dimana Peraturan atau Standard tersebut berlaku.  
*Should the specified Rules or Standards be amended during the validity of this certificate, the product is to be reappraised prior to it being placed on board vessels to which the amended Rules or Standards apply.*

## Lembar Pengukuhan Endorsement Sheet

Harus dikukuhkan oleh Surveyor BKI  
*To be endorsed by BKI Surveyor*

|   |   |
|---|---|
| <p>Pemeriksaan periodik (02 Oktober 2021 s/d 02 Oktober 2022)<br/><i>Periodical surveillance (02 October 2021 until 02 October 2022)</i></p> <p>No. Laporan :<br/><i>Report no.</i></p> | <p>Tanggal :<br/><i>Date</i></p><br><br><p>Surveyor :</p> |
|---|---|

Catatan : Sertifikat akan ditangguhkan secara otomatis jika tidak dikukuhkan dalam rentang waktu yang telah  
*Note* ditetapkan di atas.  
*The certificate will be automatically suspended if not endorsed within the specified time period above.*



# Lampiran

Annex to

## Sertifikat Persetujuan Tipe

Type Approval Certificate

No. Sertifikat : 00082.19.SP00477  
No of certificate

No. Persetujuan : 00337TA19  
Approval no.

### Deskripsi Produk

Product Description

#### Frequency Converter

| No | Type  | Main Voltage (V) | Motor Shaft Power (kW) | Enclosure Size  |
|----|---|------------------|------------------------|---|
| 1  | <b>NXS Air Cooled</b><br>AC Drives; Frequency (Input 45-66 Hz, Output 0-320 Hz);<br>U output : 0-Uin; IP 21, IP 54,<br>IP 00 (only FR10 and over) | 208 - 240        | 0.55 - 90              | FR4 - FR9   |
|    |   | 380 - 500        | 0.75 - 400             | FR4 - FR11  |
|    |   | 500 - 690        | 2.2 - 560              | FR6 - FR11  |
| 2  | <b>NXP Air Cooled</b><br>AC Drives; Frequency (Input 45-66 Hz, Output 0-320 Hz);<br>U output : 0-Uin; IP 21, IP 54,<br>IP 00 (only FR10 and over) | 208 - 240        | 0.37 - 90              | FR4 - FR9   |
|    |   | 380 - 500        | 0.75 - 1200            | FR4 - FR14  |
|    |   | 525 - 690        | 2.2 - 2000             | FR6 - FR14  |
|    | <b>NXP Liquid Cooled</b><br>AC Drives; Frequency (Input 45-66 Hz, Output 0-320 Hz);<br>U output : 0-Uin; IP 00                                    | 400 - 500        | 7.5 - 5150             | CH3-CH5, CH61, CH62/72,<br>CH63, CH64/74, 2 x CH64/74,<br>4 x CH64/74 |
|    |   | 525 - 690        | 110 - 5300             | CH61, CH62/72, CH63,<br>CH64/74, 2 x CH64/74,<br>4 x CH64/74          |

#### Features :

- NXP type can be replaced by NXI (Inverter), NXA (Active Front End), NXN (Non Regenerative Front End), NXB (Brake Chopper Unit), with various enclosure size FR4-FR8 ; FI9-F114 and CH3-CH5, CH61-64, CH72, CH74, depend on application.
- All drive can be accompanied with external components as follows: brake resistors, AC chokes, (SIN-, RFI-, DUT-, LCL-) filters.

#### Kondisi Persetujuan

Condition of Approval

- The certificate issued base on approval documents, testing reports and assessment report.
- The type approval is limited for products and manufacturer as describe in this certificate.
- Individual Product Certification is required for frequency converter when used for motor controller which drive essential equipment as specified in BKI Rules Part. 1, Volume IV from 50 kW/kVA upwards.


#### Dokumentasi Persetujuan

Approval Documentation

- Company documents, manufacturing documents, quality documents, product documents and technical drawing as reviewed with contract no. 1941090069.
- Assessment Report for Type Approval no. 00477-SP/C1/2019 dated on 03 October 2019 include all of test report and documents attached.

#### Penandaan Produk

Marking of Product

Every products identified by a label and at least completed with data of unit type, serial number, power, input/output voltage, input/output frequency, IP number, phases and operation temperature. If individual product certificate is issued, an additional label need to supply with data of unit type, serial number and BKI approval number +  stamp.

#### Pemeriksaan periodik

Periodical Surveillance

For retention of the approval, a BKI Surveyor shall conduct periodical surveillance on 02 October 2021 until 02 October 2022 to verify that approved quality system, etc. of the manufacturing works are maintained satisfactorily.

The main scope of the periodical surveillance will normally include :

- Verification of the manufacturer's production and quality system with regard to ensure continued consistent production of the Type Approved products at the manufacturer's premises.
- Review of the approval documentation and that this is still used as basis for the production.
- Review of possible changes to the properties of the product.
- Verification of the product marking.
- Result from Production Sample Test (PST) or Routine Test (RT) checked (if not available, tests according to PST or RT to be carried out).