NIPPON KAIJI KYOKAI

# TYPE APPROVAL CERTIFICATE FOR AUTOMATIC DEVICES AND EQUIPMENT

Certificate No. TA20569M

**This is to certify** that the undernoted product(s) has/have been approved in accordance with the requirements specified in Chapter 1, Part 7 of "Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use" and the relevant Society's Rules.

This certificate is issued to

| | |
|---|---|
| Manufacturer: | **ABB Oy Drives Finland** |
| Place of Manufacturing: | **P. O. Box 184, Hiomotie13, FIN-00381 Helsinki, Finland** |
| Product description: | **Frequency Converter** |
| Model: | **ACS880-04 Series** |
| Approval No.: | **15A045** |
| Valid until: | **23 December 2025** |

This certificate is subject to the conditions specified in the attached sheet(s).

Issued at Tokyo on 9 November 2020.

T. Shimada
General Manager
Machinery Department

Note: The manufacturer, if desired, is requested to apply to the Society for renewal prior to the expiration date.

ABB DMS:3AXD10000536973

**Specification & documents:**

1. Particulars:

Power range: 200kW to 710kW

Power supply: 380V to 415V (-3), 380 to 500V (-5) and 525V to 690V (-7)

2. Components and reference drawings:

| Component | Drawing |
|---|---|
| 3AXD10000313808,<br>3AXD10000313789,<br>3AXD0000313808,<br>3AXD100000313790, | 3AUA0000128301 (Hardware manual)<br>3AFE 001509 (Quality Manual)<br>3AFE 002571 (Quality policy of testing)<br>3AFE 002241 (Software Life Cycle Model Process Description)<br>3AFE 002242 (Software Development Process Process description) |

3. Documentation and Test Reports:

3AXD10000114570, 3AXD10000319393, 3AXD00000596052,
SGS Fimko EMC Ltd. Report No. 233660, SGS Fimko EMC Ltd. Report No. 254363,
SGS Fimko EMC Ltd. Report No. 277447-1, SGS Fimko EMC Ltd. Report No. 277447-2,
3AXD100000319393, 3AXD00000596052, 3AXD10000241834, 3AXD10000106522,
3AXD10000309964, 3AXD10000287077, 3AXD10000266957, 3AXD10000406983,
ZVTT-S-03275-13, VTT-S-06084-12, ACS 880-07 R11, VTT-S-01320-13, 3AXD10000249676,
3AXD10000242533, 3AXD1000351619, 3AXD10000315766, 3AXD10000413217,
SGS Fimko EMC Ltd. Report No. 233660,
3AXD10000248380, 3AXD10000089327, 3AXD10000331826, 3AXD10000281074,
Nemko Test Report Number 224724, SGS Test Report Number 275996,
SGS Test Report Reference number 273473-1, Nemko Test Report Number 243333-1,
Nemko Test Report Number 252375, Nemko Test Report Number 276592-2,
Nemko Test Report Number 276592-1, 3AXD10000415632,
SGS Test Report Reference number 272110-1, SGS Test Report Number 275993-1,
SGS Test Report Reference number 299863-1-7, 299863-1-8, 299863-1-10, 293698-1-2 (For compliance with IACS E10 Rev.7 requirement)

**- To be continued -**

Attached sheet -2/2 to the Certificate No. TA20569M

**Test items & approval conditions:**

1. Test items: (Applied testing items are marked with X.)

| ENVIRONMENTAL TESTS (IACS E10 Rev.7 basis) | | Mark |
|---|---|---|
| External examination | | X |
| Operation test and performance test | | X |
| Electric power supply failure test | | X |
| Power supply fluctuation test | Electric | X |
| | Pneumatic and Hydraulic | -- |
| Insulation resistance test | | X |
| High voltage test | | X |
| Pressure test (Pneumatic and Hydraulic) | | -- |
| Dry heat test (Temperature 40℃×16 hours & 55℃×16 hours) | | X |
| Damp heat test | | X |
| Vibration test (Acceleration ±0.7g) | | X |
| Inclination test | | -- |
| Cold test (Temperature -40℃×20 hours & -15℃×16 hours) | | X |
| Salt mist test | | -- |
| Electrostatic discharge immunity test | | X |
| Radiated radio frequency immunity test | | X |
| Conducted low frequency immunity test | | X |
| Conducted high frequency immunity test | | X |
| Burst / Fast transient immunity test | | X |
| Surge immunity test | | X |
| Radiated emission test | | X |
| Conducted emission test | | X |
| Flame retardant test | | -- |

2. Approval condition:

(1) The product is not allowed to be installed in the bridge and on open decks.

(2) In case ambient temperature is more than 40℃, ambient temperature derating shall be considered.

**- The End -**