DNV·GL

Certificate No:
TAE00001J4

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Frequency Converter

with type designation(s)
ACS6000

Issued to
ABB Schweiz AG
Turgi AG, Switzerland

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

Application :

Frequency converters for use in marine and offshore applications

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

This Certificate is valid until **2017-12-31**.

Issued at **Høvik** on **2017-01-17**

for **DNV GL**

DNV GL local station: **Augsburg**

Approval Engineer: **Nicolay Horn**

Andreas Kristoffersen
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.

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Name and place of manufacturer

ABB Switzerland Ltd
Austrasse
CH-5300 Turgi
Switzerland

ABB Sp. z o.o.
27 Placydowska Str.
Aleksandrów Łódzki
Poland

Product description

The ACS 6000 is a medium voltage frequency drive for induction, synchronous or permanent magnet motors. The ACS 6000 can be configured as a single or multi drive configuration.

Power	Input Voltage	Output voltage	Output frequency	Ingress Protection
3 – 36 MW	1,65 – 3,3kV	2,3-3,3kV	0-75Hz	IP 32*

* optional ingress protection IP 42 and IP 54

Type designation (typecode):

ACS6x'x'' – y'y'' – z'z''z''' – …
x': number of supply units [1,2,3]
x'': power of each supply unit [03-14MVA]
y': type of input section [A (active), L (passive), F (active with filter), D (direct on line with reactor)]
y'': number of pulses [06 (6 pulse), 12 (12 pulse), 18 (18 pulse), 24 (24 pulse)]
z': number of inverters [1,2,3,4]
z'': type of motor [s (synchronous), a (asynchronous), p (permanent magnet)]
z''': motor power of each inverter [03-13MVA]

Application/Limitation

Product certification.
A DNV product certificate is needed for each delivery. The following documents shall be submitted for approval:
- Reference to this Type Approval Certificate
- A document covering the intended use and configuration (ACS6000 "VSD Data Sheet").
- Test program for routine tests and functional tests
- Single line diagram (only applicable for multi drive configuration)
- If additional components apart from the type approved frequency converter are part of the delivery, documentation in accordance with DNV GL rules Pt.4 Ch.8 Sec.1 table B2 shall be delivered for the additional components.

EMC
The converter is EMC classed C4 according to IEC 61800-3. To fulfill EMC requirements the converter must be installed as described in ABB ACS 6000 User Manual (doc. No. 3BHS212794).

Type Approval documentation

Tests carried out

Tests according to type approval program:
APPENDIX A – DNV TYPE APPROVAL - 822.20 SEMICONDUCTOR CONVERTERS

Marking of product

ACS 6000 - Type designation

Periodical assessment

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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.

Assessment to be performed at 2 and 3,5 year.

END OF CERTIFICATE