Certificate No:
TAE000047S

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Frequency Converter

with type designation(s)
VS10, VS30-23, VS30-40, DSV15, DSV35

Issued to
CG Drives & Automation Germany GmbH
Wernigerode, Sachsen-Anhalt, Germany

is found to comply with
DNV GL 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 GL.

Issued at **Hamburg** on **2021-08-09**
This Certificate is valid until **2026-08-08**.
DNV local station: **Essen**

Approval Engineer: **Thomas Hartmann**

for **DNV**

Arne Schaarmann
Head of Section

Product description

Adjustable speed semi-conductor converters for motor drives with a power ranges from 0.25 kW up to 22 kW.

General performance data

Degree of protection IP	20
Pollution degree	2
Overvoltage Category	III
Nominal Input frequency	50/60 Hz
Upstream protection	Fuses or circuit-breaker as per maker's instructions
Output frequency	0…599 Hz
Cooling method (power circuits)	Forced Air

Model particulars

Type	Rated power	Nominal voltage	Connection	Supply voltage range	Rated current at nominal voltage
VS10	0,25-2,2 kW	230 V	1-phase	190–240 V	1,7-9,6 A
VS30-23	0,25-2,2 kW	230 V	1-/3-phase	190–240 V	1,7-9,6 A
VS30-40	0,37-2,2 kW	400 V	3-phase	380–480 V	1,3-5,6 A
DSV15	0.25-2.2 kW	230 V	1-phase	190–240 V	1.7-9.6 A
DSV35	0.37-22 kW	400 V	3-phase	380–480 V	1.3-47.0 A

Application/Limitation

Converters to be installed in a cubicle/ switchboard in accordance with "Mounting and switch on instruction"

Location classes according to CG-0339:

Temperature class	B[1)]
Vibration class	A
Humidity class	A[2)]
EMC class	A[3)]

1) Maximum ambient temperature depends on switching frequency and model. Output current de-rating as per maker's instructions apply.

2) Installation at locations where special precautions to avoid condensation are taken or anti-condensation measures are required.

3) Converters with EMC classed C2 or C3 according to IEC 61800-3 can be installed in "special distribution zone" and "general power distribution zone" in accordance with IEC 60533 provided precautions are taken to attenuate these effects on the distribution system, so the safe operation is assured. The use of external filters to meet IEC 61800-3 is required.

Guidance Note:
The EMC measures should be derived from an EMC analysis and plan in accordance with IEC 60533 Annex B and /or IEC 61800-3 Annex E.
End of Guidance note

Type Approval documentation

Tests carried out

Electrical and performance tests according to IEC 61800-5-1, EMC according 61800-3, Environmental and Vibration tests according to CG-0339 (2019)

Marking of product

CG - Type designation - Power – Voltage

Place of Production

Customer NPS-ID 10691351

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 after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE