DNV·GL

Certificate No:
TAE00001BS

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Frequency Converter

with type designation(s)
SINAMICS S120 Cabinet Modules, Liquid Cooled, Application Marine Drives, DFE

Issued to
SIEMENS AG
Ruhstorf a. d. Rott, Germany

is found to comply with
DNV GL class programme DNVGL-CP-0395 – Type approval – Semiconductor converters
DNV GL rules for classification – Ships and offshore units

Application :

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

This Certificate is valid until **2021-08-31**.

Issued at **Hamburg** on **2016-09-01**
DNV GL local station: **Augsburg** for **DNV GL**

Approval Engineer: **Jens Altmann**

Duy Nam Le
Head of Automation 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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Product description

6SE04 Series Frequency Converter

Cooling Circuit

Closed cooling circuit

Harmonics

6-pulse, 12-pulse, 18-pulse, 24-pulse

Input supply voltage

380...480V, 50Hz, IT-Network (unearthed)
380...480V, 60Hz, IT-Network (unearthed)
660...690V, 50Hz IT-Network (unearthed)
660...690V, 60Hz IT-Network (unearthed)

Diode Line Modules

Module Power [kw]	Mains Voltage	Chassis	MLFB Diode Line Module
1700	690V	HDL	6SL3325-1TE32-1AA3
1700	690V	HDL	6SL3325-1TE32-6AA3
1100	690V	GDL	6SL3325-1TE33-1AA3
2100	690V	JDL	6SL3325-1TE35-0AA3

Output current

400V

Motor Current [A]	Number of Motor Modules	Frame Size Motor Module	MLFB Motor Module
210	1	FXL	6SL3325-1TE32-1AA3
260	1	FXL	6SL3325-1TE32-6AA3
310	1	GXL	6SL3325-1TE33-1AA3
490	1	GXL	6SL3325-1TE35-0AA3
605	1	HXL	6SL3325-1TE36-1AA3
745	1	HXL	6SL3325-1TE37-5AA3
840	1	HXL	6SL3325-1TE38-4AA3
985	1	JXL	6SL3325-1TE41-0AA3
1260	1	JXL	6SL3325-1TE41-2AA3
1405	1	JXL	6SL3325-1TE41-4AA3
1595	2	HXL	6SL3325-1TE38-4AA3
1870	2	JXL	6SL3325-1TE41-0AA3
2125	3	HXL	6SL3325-1TE35-0AA3
2395	2	JXL	6SL3325-1TE41-2AA3

2670	2	JXL	6SL3325-1TE41-4AA3
3190	4	HXL	6SL3325-1TE38-4AA3
3590	3	JXL	6SL3325-1TE41-2AA3
4005	3	JXL	6SL3325-1TE41-4AA3
4790	4	JXL	6SL3325-1TE41-2AA3
5340	4	JXL	6SL3325-1TE41-4AA3

690V

Motor Current [A]	Number of Motor Modules	Frame Size Motor Module	MLFB Motor Module
575	1	HXL	6SL3325-1TG35-8AA3
810	1	HXL JXL	6SL3325-1TG38-0AA3 6SL3325-1TG38-1AA3
1025	1	JXL	6SL3325-1TG41-0AA3
1270	1	JXL	6SL3325-1TG41-3AA3
1560	1	JXL	6SL3325-1TG41-6AA3
1940	2	JXL	6SL3325-1TG41-0AA3
2410	2	JXL	6SL3325-1TG41-3AA3
2960	2	JXL	6SL3325-1TG41-6AA3
3620	3	JXL	6SL3325-1TG41-3AA3
3895	4	JXL	6SL3325-1TG41-0AA3
4440	3	JXL	6SL3325-1TG41-6AA3
4820	4	JXL	6SL3325-1TG41-3AA3
5930	4	JXL	6SL3325-1TG41-6AA3

Option modules

Brake-chopper
DC-Switch

Infeed type

LV-Marine Application based on BLM
LV-Marine Application based on DLM with DC link capacitance
LV-Marine Application based on DLM without DC link capacitance

Electronic control equipment

Equipment	MLFB
Control Unit CU320-2 DP	**6SL3040-1MA0x-0Axx**
Control Unit CU320-2 PN	**6SL3040-1MA0x-0Axx**
Basic Operator Panel BOP20	**6SL3055-0AA00-4Bxx**
Communication Boards	**6SL3055-0AA00-2Cxx**

CBC10	
DRIVE CLiQ Hub Modules DMC20	**6SL3055-0AA00-6Axx**
Terminal Module TM31	**6SL3055-0AA00-3Axx**
Voltage Sensing Modules VSM 10	**6SL3053-0AA00-3Axx**
Sensor Module SMC 30	**6SL3055-0AA00-5Cxx**
Advanced Operator Panel AOP30	**6SL3055-0AA00-4Cxx**

Application/Limitation

Converter assamblies installed in Rittal TS8 cubicles with marine specific modifications. To be equipped with anti condensation heating and air inlet filters. Protection degree IP20, IP21, IP23, IP43 and IP54. Temperature class A, Humidity class B, Vibration class A, EMC class A

May be used for all type of drives including electric propulsion

Type Approval documentation

According to Siemens Overview chart Drawing No.: A5E39156487A, Project Number 262.1-021929-1

Tests carried out

According to Siemens Overview chart Drawing No.: A5E39156487A, Project Number 262.1-021929-1

Marking of product

In accordance with IEC60146-1-1 § 6.6.2

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 Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and 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 least every 2 year.

END OF CERTIFICATE