



Certificate no.:
TAE000052Y

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Frequency Converter

with type designation(s)
SINAMICS G220

issued to

Siemens AG
Erlangen, Bayern, Germany

is found to comply with

DNV 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.

Issued at **Høvik** on **2025-08-07**

This Certificate is valid until **2030-08-06**.

for **DNV**

DNV local unit: **Augsburg**

Approval Engineer: **Thomas Hartmann**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

SINAMICS G220 drive modules for adjustable speed electrical power drive systems for three-phase voltages between 200V up to 500V and power ranges from 0.55kW up to 55kW.

General performance data

SINAMICS G220 - GPD (General purpose drive) and SINAMICS G220 - CPD (Clean Power Drives)

Degree of protection	IP20/ IP55
Pollution degree	2 ¹⁾
Overvoltage Category	III
Nominal Input frequency	50/60Hz
Max. Prospective short-circuit current (SCCR)	100kA ²⁾
Upstream protection Fuse or circuit-breaker	Fuse or circuit-breaker
Output frequency	0...550Hz
Cooling method (power circuits)	Forced Air

¹⁾ SINAMICS G220 in IP55 meet damp heat (cyclic) testing, see location classes for IP55

²⁾ For SCCR ratings of circuit breaker and motor starters consult G220 operating instructions

Converter code designation

General Purpose Converter											
valid MLFB	s	t	uv	w	x	y	3~ Voltage ¹⁾		Power Range (kW)	EMC ²⁾	Frame size
6SL4112-0stuv-0wxy	C; D	A	05; 06; 08; 10; 11	A; B; E;F	A;F	0	200V	IP20	0,75 - 3kW	UFIL	A
6SL4112-0stuv-0wxy	C; D	A	12; 13	A; B; E;F	A;F	0	200V	IP20	4 - 5,5kW	UFIL	B
6SL4112-0stuv-0wxy	C; D	A	15; 16	A; B; E;F	A;F	0	200V	IP20	7,5 - 11kW	UFIL	C
6SL4112-0stuv-0wxy	C; D	A	17; 18; 20	A; B; E;F	A;F	0	200V	IP20	15 - 18,5kW	UFIL	D2
6SL4112-0stuv-0wxy	C; D	A	21; 23	A; B; E;F	A;F	0	200V	IP20	22 - 30kW	UFIL	E
6SL4112-0stuv-0wxy	J; K; L; M	A; P; Q	05; 06; 08; 10; 11; 12; 13	A; B; E;F	A;F	0	200V	IP55	0,75 - 4kW	UFIL	B
6SL4112-0stuv-0wxy	J; K; L; M	A; P; Q	15; 16	A; B; E;F	A;F	0	200V	IP55	7,5 - 11kW	UFIL	C
6SL4112-0stuv-0wxy	J; K; L; M	A; P; Q	17; 18; 20	A; B; E;F	A;F	0	200V	IP55	15 - 18,5kW	UFIL	D2
6SL4112-0stuv-0wxy	J; K; L; M	A; P; Q	21; 23	A; B; E;F	A;F	0	200V	IP55	22 - 30kW	UFIL	E
6SL4113-0stuv-0wxy	C; D	A	08; 10; 11; 12; 13	A; B; E;F	A;F	0	400V	IP20	1,1 - 4kW	UFIL	A
6SL4113-0stuv-0wxy	C; D	A	15; 16	A; B; E;F	A;F	0	400V	IP20	5,5 - 7,5kW	UFIL	B
6SL4113-0stuv-0wxy	C; D	A	17; 18	A; B; E;F	A;F	0	400V	IP20	11 - 15kW	UFIL	C
6SL4113-0stuv-0wxy	C; D	A	20; 21	A; B; E;F	A;F	0	400V	IP20	18,5 - 22kW	UFIL	D1
6SL4113-0stuv-0wxy	C; D	A	23; 24	A; B; E;F	A;F	0	400V	IP20	30 - 37kW	UFIL	D2
6SL4113-0stuv-0wxy	C; D	A	26; 27	A; B; E;F	A;F	0	400V	IP20	45 - 55kW	UFIL	E
6SL4113-0stuv-2wxy	C; D	A	08; 10; 11; 12; 13	A; B; E;F	A;F	0	400V	IP20	1,1 - 4kW	C2	A

valid MLFB	s	t	uv	w	x	y	3~ Voltage ¹⁾		Power Range (kW)	EMC ²⁾	Frame size
6SL4113-0stuv-2wxy	C; D	A	15; 16	A; B; E;F	A;F	0	400V	IP20	5,5 - 7,5kW	C2	B
6SL4113-0stuv-2wxy	C; D	A	17; 18	A; B; E;F	A;F	0	400V	IP20	11 - 15kW	C2	C
6SL4113-0stuv-2wxy	C; D	A	20; 21	A; B; E;F	A;F	0	400V	IP20	18,5 - 22kW	C2	D1
6SL4113-0stuv-2wxy	C; D	A	23; 24	A; B; E;F	A;F	0	400V	IP20	30 - 37kW	C2	D2
6SL4113-0stuv-2wxy	C; D	A	26; 27	A; B; E;F	A;F	0	400V	IP20	45 - 55kW	C2	E
6SL4113-0stuv-0wxy	J; K; L; M	A; P; Q	08; 10; 11; 12; 13; 15; 16	A; B; E;F	A;F	0	400V	IP55	1,1 - 7,5kW	UFIL	B
6SL4113-0stuv-0wxy	J; K; L; M	A; P; Q	17; 18	A; B; E;F	A;F	0	400V	IP55	11 - 15kW	UFIL	C
6SL4113-0stuv-0wxy	J; K; L; M	A; P; Q	20; 21	A; B; E;F	A;F	0	400V	IP55	18,5 - 22kW	UFIL	D1
6SL4113-0stuv-0wxy	J; K; L; M	A; P; Q	23; 24	A; B; E;F	A;F	0	400V	IP55	30 - 37kW	UFIL	D2
6SL4113-0stuv-0wxy	J; K; L; M	A; P; Q	26; 27	A; B; E;F	A;F	0	400V	IP55	45 - 55kW	UFIL	E
6SL4113-0stuv-2wxy	J; K; L; M	A; P; Q	08; 10; 11; 12; 13; 15; 16	A; B; E;F	A;F	0	400V	IP55	1,1 - 7,5kW	C2	B
6SL4113-0stuv-2wxy	J; K; L; M	A; P; Q	17; 18	A; B; E;F	A;F	0	400V	IP55	11 - 15kW	C2	C
6SL4113-0stuv-2wxy	J; K; L; M	A; P; Q	20; 21	A; B; E;F	A;F	0	400V	IP55	18,5 - 22kW	C2	D1
6SL4113-0stuv-2wxy	J; K; L; M	A; P; Q	23; 24	A; B; E;F	A;F	0	400V	IP55	30 - 37kW	C2	D2
6SL4113-0stuv-2wxy	J; K; L; M	A; P; Q	26; 27	A; B; E;F	A;F	0	400V	IP55	45 - 55kW	C2	E

Clean Power Converter

valid MLFB	s	t	uv	w	x	y	3~ Voltage ¹⁾		Power Range (kW)	EMC	Frame size
6SL4113-2stuv-2wxy	C; D	A	16; 17; 18; 20; 21	A; B; E;F	A;F	0	400V	IP20	7,5 - 22kW	C2	D1
6SL4113-2stuv-2wxy	C; D	A	23; 24	A; B; E;F	A;F	0	400V	IP20	30 - 37kW	C2	D2
6SL4113-2stuv-2wxy	C; D	A	26; 27	A; B; E;F	A;F	0	400V	IP20	45 - 55kW	C2	E
6SL4113-2stuv-2wxy	J; K; L; M	A; P; Q	16; 17; 18; 20; 21	A; B; E;F	A;F	0	400V	IP55	7,5 - 22kW	C2	D1
6SL4113-2stuv-2wxy	J; K; L; M	A; P; Q	23; 24	A; B; E;F	A;F	0	400V	IP55	30 - 37kW	C2	D2
6SL4113-2stuv-2wxy	J; K; L; M	A; P; Q	26; 27	A; B; E;F	A;F	0	400V	IP55	45 - 55kW	C2	E

¹⁾ 200V drives are suitable for: 3~ AC 200V ... 240V;

400V drives are suitable for: 3~ AC 380V ... 415V / 3~ AC 440V ... 500 V

²⁾ UFIL = drives without filter (unfiltered)

"s" - wildcard definition (Cooling / Protection / Coating)	
C:=	IP20 drives with 3C2 coating
D:=	IP20 drives with 3C3 coating
J:=	IP55 drives with 3C2 coating
K:=	IP55 drives with 3C3 coating
L:=	IP55 drives with mains disconnect and 3C2 coating
M:=	IP55 drives with mains disconnect and 3C3 coating

"t" - wildcard definition (Hardware configuration)	
A:=	no special hardware configuration
P:=	on IP55 drives ordering code for Gland plate with pre drilled metric holes
Q:=	on IP55 drives ordering code for Gland plate with pre drilled imperial holes

"uv" - wildcard definition (rated power; IEC rating)	
05:=	0,55kW
06:=	0,75kW
08:=	1,1kW
10:=	1,5kW
11:=	2,2kW
12:=	3kW
13:=	4kW
15:=	5,5kW
16:=	7,5kW
17:=	11kW
18:=	15kW
20:=	18,5kW
21:=	22kW
23:=	30kW
24:=	37kW
26:=	45kW
27:=	55kW

For wildcard "w", "x" and "y" please consult SIEMENS product catalogue

Application/Limitation

SINAMICS G220 with degree of protection IP20 to be installed in a cubicle/ switchboard in accordance with Siemens Operating Instructions SINAMCIS G220" and "Application Manual SINAMICS G220 Marine Applications"

Location classes according to CG-0339 for IP20:

Temperature class	D
Vibration class ¹⁾	A
Humidity class ²⁾	A
EMC class ³⁾	A

SINAMICS G220 with a degree of protection IP55 may installed inside the vessel as per RU-SHIP Pt.4 Ch.8 Sec.10 table 1.

Location classes according to CG-0339 for IP55:

Temperature class	C
Vibration class ¹⁾	A
Humidity class	B
EMC class ³⁾	A

¹⁾ Vibration damper as per SINAMICS Marine Systems Application Manual, 07/2025, A5E54475957A AA, section 4.1.8 to be installed.

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

³⁾ Converters with conducted and radiated emission above the DNV required limits can be installed in "special power distribution zone" and "general power distribution zone", in accordance with IEC 60533 provided measures are taken to attenuate these effects on the distribution system, so the safe operation is assured. Planned EMC measures shall be submitted for approval prior to installation onboard.

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

All 200 V and 400 V converters with class-A filter comply with EMC-requirements of "general power distribution zone" for TN-Grids. Converters to be installed in accordance with Siemens Operating Instructions SINAMCIS G220" and "Application Manual SINAMICS G220 Marine Applications"

For each delivery the following documents shall be submitted for approval:

- Reference to this Type Approval Certificate
- Functional description for the intended use, configuration and interface (e.g. alarms, monitoring and auxiliary power supplies)
- Test program for routine tests and functional tests
- If additional components to the type approved frequency converter are delivered, documentation according to DNV rules Pt.4 Ch.8 Sec.1 table 2 shall be submitted for review

Type Approval documentation

Tests carried out

Electrical and performance tests (IEC 61800-5-1, IEC 60146-1-1), Environmental, EMC and Vibration tests according to DNV CG-339 [2021]

Marking of product

SIEMENS- Type designation - Power – Voltage

Name and place of manufacturer

Siemens AG
Frauenauracher Str. 80
91056 Erlangen
Germany

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.