

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Frequency Converter

with type designation(s)
Simotras HD

Issued to

**Siemens AG Process Industries and Drives Large Drives
PD LD
Nürnberg, Bayern, 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 **2018-07-01**

for **DNV GL**

This Certificate is valid until **2023-06-30**.

DNV GL local station: **Augsburg**

Approval Engineer: **Maik Gagern**

.....
Arne Schaarmann
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.



Production site

Siemens AG, DF FA SE, Digital Factory Division, Factory Automation Systems Engineering
Breslauer Strasse 5, 90766 Fürth, Germany.

Product description

6SG70 Series. Microprocessor-controlled converters for speed of speed control of slipping motors with stator phase angle control and phase reversal.

Nomenclature :

6SG70 x x - 0 E B 6 0 - 0 - Z
I II III IV V VI VII VIII IX

I - Basic Designation 6SG70

II - Nominal AC Current

II	Nominal AC - Output Current in (A) Forced ventilation at Tamb=40°C	Power Output at Input voltage 500VAC (kW) Forced ventilation at Tamb=40°C	Nominal AC - Output Current in (A) Option Z=H78 Forced ventilation at Tamb=65°C	Power Output at Input voltage 500VAC (kW) Option Z=H78 Forced ventilation at Tamb=65°C
50	60,0 self cooling Tamb=45°C	47,0 self cooling Tamb=45°C	42,0 self cooling Tamb=65°C	33,0 self cooling Tamb=65°C
52	78,0 self cooling Tamb=45°C	61,0 self cooling Tamb=45°C	55,0 self cooling Tamb=65°C	43,0 self cooling Tamb=65°C
55	98,0	76,0	70,0	55,0
60	112,0	87,0	80,0	62,0
62	142,0	110,0	100,0	78,0
65	180,0	140,0	125,0	97,0
70	225,0	175,0	150,0	117,0
72	285,0	222,0	200,0	156,0
76	360,0	280,0	250,0	195,0
76	130,0	100,0 Option Z=H70, self cooling Tamb=45°C	----	----
76	360,0	386,0 Input voltage 690V	----	----
76	130,0	140,0 Input voltage 690V option=H70 self cooling Tamb=45°C	----	----
80	525,0	410,0	365,0	285,0
82	680,0	530,0	475,0	370,0
85	900,0	700,0	700,0	546,0

II = 76 , Option Z= H70 self cooling , Tamb=45°C , Iout =130 A

III – 0	Thyristor construction	
IV - E	Rated supply voltage:	E = 500 VAC K = 690V
V - B	With current transformer	
VI +VII - 60	4 Quadrant Device	
VIII - 0	No Options	
IX - Z	with Options	H70 H78

Simotras HD :

4Q / 500V, 690V :

6SG70 followed by (50,52,55,60,62,65,70,72,76,80,82,85), followed by 0 EB 60 , followed by - 0 - Z

Application/Limitation

Supply voltage range:	110 - 500 V AC / 200 - 690V AC
Voltage variation:	min. \pm 10 %
Frequency variation:	45 – 65 Hz , fnenn 50 /60 Hz
Temperature range in operation:	0 – 40 °C forced cooling, 0 – 45 °C self cooling, 0– 65°C Option H78.
Protection degree:	IP 00
Temperature class:	A
Vibration class:	A
Humidity class:	A
EMC class:	IEC 61800-3 /CN 2.4 To be used on EMC class A locations.

The SIMOTRAS HD must be regarded as a component. The actual installation to be designed according to Siemens Instructions Manual and according to the applicable DNV Rules for the actual application. To be installed in an enclosure with an IP degree in accordance with DNV Rules w.r.t. location.

For location in devices with enhanced air cooling the current output must be derated 6% at Tamb=45 °C ambient temperature and with 10 % at Tamb=50 °C .

Devices with Option H78 are suitable for Tamb=65°C with reduced current/power

For details see Siemens Operating Instruction.

Application Software:

The Type Approval does not cover application software. For application software, the following applies:
When the frequency converter is used in an application to be classed by DNV, documentation for the actual application is to be submitted for approval in each case. Reference is made to DNV Rules for Pt.4 Ch.8 Electrical Installations and Pt.4 Ch.9 Instrumentation and Automation.

Clause for application software control:

All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV for evaluation and approval. Major changes in the software are to be approved before being installed in the computer. Software version: **V3.283**

Type Approval documentation

Technical info:

Siemens "Simotras HD 6SG70 Series", Operating instructions Edition 06.

Test reports:

Siemens "Type test and test report of Marine Electrical Equipment Applied to Series SIMOREG 6RA70 / 6SG70 dated 2004-11-29.

Job Id: **262.1-007907-9**
Certificate No: **TAE000038W**

Tests carried out

Visual inspection, Performance, Power supply failure, Power supply variations, Vibration, Dry heat, Damp heat, Insulation resistance, High voltage.

EMC: The following tests are in accordance with the IEC 601800-3 / CN 2.4: Electrical fast transient (Burst), electrical slow transient (Surge), RF-common mode Voltage, radiated RF-electromagnetic fields, electric discharge (ESD), radiated and conducted emission.

Marking of product

Siemens Simotras HD – Type designation – Current – Voltage

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