Certificate No:
TAA00003B3

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Peripheral Equipment

with type designation(s)
SeaStream Workstation, SeaStream Portable Joystick

Issued to
GE Energy Power Conversion UK Ltd.
Rugby, Warwickshire, United Kingdom

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.

Location classes:

Type	Temperature	Humidity	Vibration	EMC	Enclosure
SeaStream Workstation	B	B	A	B	A / IP20
SeaStream Portable Joystick	D	B	A	B	C / IP56

Issued at **Høvik** on **2023-11-16**
This Certificate is valid until **2028-11-15**.
DNV local unit: **UK & Ireland CMC & VMC**

for **DNV**

Approval Engineer: **Martin Skårerverket**

Frederik Tore Elter
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.

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 300,000 USD.

Product description

SeaStream Workstation
The SeaStream Workstation console is an operator HMI workstation for various control and automation applications on a vessel. Applications include operator stations for dynamic positioning, vessel automation, manual controls, navigation and communications. Approved hardware listed below:

SeaStream DP Workstation	**WSnn DPS 004 XYZ**
Item name	Designation
Embedded PC	RXi2-EP
Data Module 26" monitor	6026-SD012
Monitor Control Strip	3310-20-02, 3310-23-02
SeaStream Joystick panel	3312-50-05PCB
Lilaas Joystick	L01-GE
SeaStream Trackball panel	3332-50-05PCB
SeaStream MTC Thruster panel	3523-51
SeaStream MTC Central panel	3523-50
SeaStream Illuminated logo	3311-52-05PCB
Dell AC511 Speaker bar	AC511
Startech 4 port USB hub	ST4200USBM
Startech 7 port USB hub	ST7200USBM
Aten USB serial converter	UC-232A
Dallas Semiconductor Serial iButton reader	DS1411-S09
Phoenix Contact FL Switch SF	FL Switch SF
Moxa Serial converter	TCC-80
MAE 99-04 Serial Converter panel	MAE-99-04
Cherry Keyboard	J84-2120
Phoenix Contact PSU	QUINT4-PS/1AC/24DC/20
Phoenix Contact DC:DC converter	QUINT-PS/24DC/12DC/8
Phoenix Contact UPS	QUINT4-UPS/1AC/1AC/500VA/USB
Schaffner Mains Filter	FN2070-6/06
SeaStream DP Alert Master	**ASnn MAS 014 001**
SeaStream DP Alert system	98-3124-26
Phoenix Contact Step 5V PSU	STEP3-PS/1AC24DC/5/PT
Phoenix Contact Step Diode	STEP-DIODE/5-24DC/2x5/1x10
Schaffner Mains Filter	FN2010-06-06
SeaStream Fixed Joystick	**JSnn xxx 008 xxx**
Embedded PC	RXi-142
KVMtec KVM extender	SVX-T
Blackbox KVM extender	ACX-300-T-R2

SeaStream Portable Joystick
The Seastream Portable Joystick is primarily a remote display and user interface for a PC workstation. It contains a Marine grade monitor, a USB joystick and some additional support components. Approved hardware listed below:

SeaStream Portable Joystick	**JSnn xxx 006 xx2**
Data Module 12" monitor	6012-SD001
SeaStream Joystick panel	3312-50-05PCB
Lilaas Joystick	L01-GE
Dell AC511 Speaker bar	AC511
KVMtec KVM extender	SVX-R
Blackbox KVM extender	ACX-300-R-R2
Puls DC:DC converter	CD5.121

Power supply rating: 230 VAC (SeaStream Workstation)
24 VDC (SeaStream Portable Joystick)

Compass safe distance measurements:
- SeaStream Workstation: Standard: 700 mm Steering: 500 mm.
- SeaStream Portable Joystick: Standard: 400 mm Steering: 300 mm.

Place of manufacture

DNV ID: 10755717
Unit 3 Rothley Lodge Commercial Park, Rothley,
Leicestershire, LE7 7NL
United Kingdom

DNV ID: 10755715
Unit 4, Pool Road Business Centre,
Pool Road, Nuneaton,
Warwickshire, CV10 9AQ
United Kingdom

DNV ID: 10759413
Unit 5, Kingswood Business Park,
Connaught Road,
Hull, HU7 3AP
United Kingdom

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Product certificate

If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After certification the clause for software control will be put into force.

Software control

All changes in software are to be recorded as long as the system is in use on board. Documentation of major changes is to be forwarded to DNV for evaluation and approval before implemented on board. Certification of modified functionality may be required for the particular vessel.

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.
The special purpose tests “Acoustic noise and signals” and the Compass safe distance” were measured according to sections 11.1 and 11.2 of IEC 60945, 4th edition (2002).
Shock test: 20 15g/11ms half-sine shocks according to IEC 60068-2-27:2008.

Marking of product

The products to be marked with:
- manufacturer name
- model name
- serial number
- power supply ratings

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer’s product type marking and the 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