DNV·GL

Certificate No:
TAA000021Y

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Control and Monitoring System

with type designation(s)
BLOOMFOSS-BVTM 2001

Issued to
Bloomfoss Pte. Ltd.
Singapore, Singapore

is found to comply with
DNV GL rules for classification – Ships

Application :

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

Issued at **Hamburg** on **2018-11-13**
This Certificate is valid until **2023-11-12**.
DNV GL local station: **Certification of Materials - Singapore**

Approval Engineer: **Dariusz Lesniewski**

for **DNV GL**

Joannis Papanuskas
Head of Section

Job Id: **262.1-024151-1**
Certificate No: **TAA000021Y**

Product description

Valve Remote Control and Tank Gauging System BLOOMFOSS-BVTM 2001

System application:	
	● Local and remote operation of valves
	● Remote monitoring of tanks
	● Ship's draft measuring
Hardware main components (*):	
	Main Processing Unit and Remote I/O Modules: - Siemens SIMATIC ET200SP Series PLC CPU (1x CPU for Remote Valve Control and 1x CPU for Tank Gauging) - Siemens SIMATIC ET200SP Series PLC I/O Modules
	SIXNET SL-8ES-1 Ethrnet Switch(es)
	Computer Workstations: - HP-800ED-SFF
	Workstation Monitor(s): - HP EliteDisplay E190i 19" or - HP EliteDisplay E202 20" or - HP EliteDisplay E233 23"
	HMI touch screen(s): - Proface: AGP3750-T1-D24 / PFXGP4501TADW or - Siemens: TP270, TP170, TP277
(*) to be DNV GL type approved	
Software / Software Version(s):	
	Work Station Program: GraphWorX32 / Genesis32 Version 9.22.202.11
	PLC Program: TIA Portal / 13-GWX32-9.22
	Touch Screen Program: GP-Pro-EX / V3.50.00

Approval conditions

The following documentation of the actual application is to be submitted for approval in each case:

- Reference to this Type Approval Certificate
- Functional description
- System block diagram
- Power supply arrangement (may be part of the System block diagram)
- List of control and monitored points
- Circuit diagrams
- Test program for certification

The Type Approval covers hardware and software listed under Product description.

When the type approved software is revised (affecting all future deliveries) DNV GL is to be informed by forwarding updated software version documentation. If the changes are judged to affect functionality for which rule requirements apply a new functional type test may be required and the certificate may have to be renewed to identify the new software version.

Product certificate

Each delivery of the application system is to be certified according to Pt.4 Ch.9 Sec.1. The certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. After the certification the clause for application software control will be put into force.

Application 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 GL for evaluation and approval before implemented on board.

Application/Limitation
Validity of type approval certifciates (hardware main compontents) to be observed.
System netwok topology as specified in the document 'Network Description, Rev. 3'.

Type Approval documentation

Tests carried out
Functional tests and system failure simulations according to FAT Test Procedure, Doc. No. TP-FAT-PR, Rev. 2 (9-Jan-2017).

Marking of product
- Manufacturer Name
- Type designation

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