DNV

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Level Indicating System

with type designation(s)
VPMS Multi Purpose Monitoring and Control System

Issued to
PSM Instrumentation Ltd

Haywards Heath, West Sussex, 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:

Temperature	B
Humidity	B
Vibration	A
EMC	B
Enclosure	**Required protection according to the Rules shall be provided upon installation on board**

Issued at **Høvik** on **2021-12-09**

for **DNV**

This Certificate is valid until **2023-12-08**.
DNV local station: **Manchester**

Approval Engineer: **Jens Erling Bråten**

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Jan Tore Grimsrud
Head of Section

Product description
Multipurpose Monitoring and Control System consisting of:

Control Unit	VPMS
Analogue Input Unit	AN-ZBANA (*)
Analogue/Digital Input Unit	AN-ZBHART (*)
Digital Input Unit	AN_ZB485 (*)
Amplifier	AN-SGCNV (incl. in AJB 500-x) (*)

(*) Covered by separate Type Approval TAA0000036

Software: Application software/firmware versions: VPMS GUI interface rev. 1.1.4 onwards / VPMS firmware revision 1.1.2 onwards. DNV to be notified upon major changes, i.e., incrementation of the first digit (see also information under "Clause for application software control").

Application:
- Level monitoring
- High / High-high cargo level alarm system
- Pressure monitoring
- Temperature monitoring
- Flooding detection

Approval Conditions
The following documentation of the actual application is to be submitted for approval in each case:
- Reference to this Type Approval Certificate
- Description of scope of delivery, i.e., project specific functions and systems (**)
- System block diagram
- Power supply arrangement (may be part of the System block diagram) (***)
- List of control and monitored points
- Test program for certification

(**) With respect to user rights and access control for the operator stations, a final configuration sheet shall be produced for each system detailing the passcodes, assignments, and locations.
(***) Power supply arrangement in accordance with IMO MSC.1 Circ.1291, (continuously powered and with automatic changeover to backup supply), to be documented for flooding detection systems.

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

The current software numbers and versions are listed in internal release documents "VPMS GUI interface revision list" and "VPMS firmware revision list".
When the type approved software is revised (affecting all future deliveries) DNV is to be informed by forwarding updated software version documentation. If the changes are judged to affect functionality for which rule requirements apply (affects first two digits of SW version, covering major functionality and/or safety matters), a new 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 [1.4].
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.

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.
A Certification of Application Functions may be required for the particular vessel.

Application/Limitation
Ex installations to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Ex-certification is not covered by this certificate.

Type Approval documentation

Scanjet Connect VPMS Multi-Purpose Monitoring and Control System_OVERVIEW_1 (1)
Scanjet Connect VPMS - System Block diagram
VPMS_TA_0002, Witnessed Test Plan, rev. B
TL21011, PSM Type Approval Report – environmental, dated 2021-02-10
VPMS_TA_0005, Power supply arrangement, dated 2021-06-17
Z070_VPMS_TA_0009, rev. A Failure Mode Descriptions, dated 2021-04-15
VPMS_TA_0006, Data sheet environmental specifications, rev. A, dated 2021-04-01
WI101, Software Quality Plan, rev. A, dated Jan 2019
VPMS_TA_0004, User Interface documentation, rev. A, dated 2021-03-18
252_VPMS_TA_0008, Test Procedure at Manufacturer, rev. A, dated 2021-04-27
VPMS_TA_0001, Control System Functional Description, rev. A, dated 2021-03-02
VPMS_TA_0007, List of controlled and monitored points, rev. A, dated 2021-04-01
VPMS_TA_0003, System block diagram, rev. A, dated 2021-03-16
QP15, Product Software Control, issue B, dated June 2021
EMC test report No.1981 CR, Scanjet Connect Monitoring System, Model: VPMS, issue #1, dated 2021-04-23
EMC and salt mist testing, ZBHART/ZBANA/ZB485/SGCNV - Test Reports, rev. A, dated 2006-08-14
2004-3278, Test report Multipurpose Tank Monitoring System, rev. 01, dated 2004-03-10
KOMERI-0311-20T3533(E), ZBHART_EMC testing, dated 2021-04-06
VPMS_TA_0002, Signed Witnessed Test Plan Scanjet Connect VPMS, rev. B, dated 2021-06-08
VPMS_TA_0010, VPMS Supplier List, rev. A, dated 2021-06-16
VPMS_TA_0011, System Hardware Approval Reports overview, dated 2021-06-17
WI 102, Software version/revision control, Issue 2
Man 092, User Manual and Reference Scanjet Connect VPMS, issue A, dated 2021-04-01

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.

Marking of product

The products to be marked with:
- Manufacturer's name
- Type designation
- model name
- serial number

Place of manufacture

The PCB can be manufactured by:

FermionX Ltd
Technology Centre
Easting Close
Worthing
West Sussex, BN14 8HQ
United Kingdom
Tel: +44 (0)1903 524600
ISO 9001:2015 - Certificate No. 126284

G&B Electronic Designs Ltd
54 Woolmer Industrial Estate
Bordon
GU35 9QF
T: 01420 474188
ISO 9001:2015 - Certificate No. 597-04

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 at renewal of this certificate.

END OF CERTIFICATE