TYPE APPROVAL CERTIFICATE

Certificate No:
TAA00002ZJ
Revision No:
2

This is to certify:

That the Condition Monitoring System

with type designation(s)
PROGNOST®-SILver

Issued to
Prognost Systems GmbH
Rheine, Nordrhein-Westfalen, **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.

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

Issued at **Hamburg** on **2022-09-30**

This Certificate is valid until **2026-05-16**.
DNV local station: **Essen**

Approval Engineer: **Didier Girardin**

for **DNV**
Digitally Signed By: Papanuskas, Joannis
Location: DNV GL SE Hamburg, Germany

Joannis Papanuskas
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.

Product description

The PROGNOST®-SILver, 2nd generation is a Machine Protection System (MPS) that offers continuous high-speed data analysis for reciprocating and rotating equipment. It includes safe outputs for machine shutdown to minimize consequential damages in all critical conditions.

The system is configured by using the PROGNOST®-ADMIN software.

The system itself consists of a set of pluggable cards and modules inside a rack. Some of the cards are used for sensors which can be installed in hazardous area, the PROGNOST®-SILver, 2nd generation itself can be also installed in hazardous areas under specific conditions.

PROGNOST®-SILver, 2nd generation is designed for Safety integrity level (SIL) applications according to IEC61508 SIL3 and IEC 62061 $SIL_{CL}3$.

All recorded data can also be analyzed in the PROGNOST®-NT Condition Monitoring System (CMS) and displayed with PROGNOST®-VISU.

Card	**Description**	**Ident.**
MP1-2	MP1-2 Protection	3 002 007
DC1-2	DC1-2 DataControl	3 002 006
PS1-2-M	Power IO PW1	3 002 032
DIO1-2	Digital In 8CH, Relay Out 10CH	3 002 010

PROGNOST-SILver Rack		
CWF1-2-M	Casing	3 002 031
BP1-2	Backplane	3 002 020
BM1-2	Backplane memory	3 002 027

Analog Input Cards (intrinsically safe)		
Card	Channels	Ident.
TI1-B	4	3 001 002
AI1-B	4	3 001 005
AI2-B	4	3 001 007
AI3-B	4	3 001 009
AI4-B	4	3 001 011
AI6-2	16	3 002 026

Place of manufacture

PROGNOST Systems GmbH
Daimlerstr. 10
48432 Rheine

Application/Limitation

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 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 the certification the clause for application software control will be put into force.

- Alarm settings to be specified by engine / monitored equipment manufacturer if sensor is used for CM.

- To waive possible survey requirements for opening up main crank- and crosshead bearings this approval will not be accepted as the sole basis.

- The system has been tested and approved with screened signal cables.

Note*1

- Enclosure to be provided according instructions specified in document IN-Installation Guideline_REV00_EN,

- Ex- and SIL3 certifications are not covered by this certificate. Application in hazardous area 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

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. Documentation of major changes is to be forwarded to DNV for evaluation and approval before implemented on board.

Type Approval documentation

E191901E2 2nd Version, E201780E2, IN-Installation Guideline_REV00_EN, U202077E1, Impact ChRq 1203, Statement PSG Report Rev.02, Drawing 3022615_62816, Data Sheet AI1-B ICP, Data sheet AI2-B 4-20mA, Data sheet AI3-B Eddy Current, Datasheet AI4-B Voltage, Datasheet AI6-2 Temperature, Data sheet Casing, Data sheet DC1-2 Data Control, Data sheet DIO1-2 Input/Relay, Data sheet MP1-2 Protection, Data sheet PS1-2 Power Supply, Datasheet TI1-B Trigger

Tests carried out

Applicable tests according to Class Guideline DNVGL-CG-0339, December 2019

Marking of product

Manufacturer: PROGNOST Systems GmbH
Model name: PROGNOST®-SILver
Serial number:
Power supply rating 18….32V DC

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