



Certificate no.:
TAA00003FD

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Programmable Electronic System**

with type designation(s)
ACONIS-DS

issued to

HD Hyundai Marine Solution Co., Ltd.
Ulsan, Korea, Republic of

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 B

Humidity B

Vibration A

EMC B

Enclosure Required protection according to the Rules to be provided upon installation on board

Issued at **Busan** on **2024-11-11**

This Certificate is valid until **2026-11-10**.

for **DNV**

DNV local unit: **Ulsan**

Approval Engineer: **Dong Ho Park**

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.



Form code: TA 251

Revision: 2023-09

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Product description

ACONIS-DS is an integrated system designed to perform alarm, monitoring and control functions as detailed in the section "Application/Limitation". The following components are included:

Component	Description	Hardware	Software		Remark
		Version	Execute files	Version	
HiSCM	Hyundai Intelligent Smart communication Unit	HiSCM-V1.2-120307	HiSCM	V2.2.X	
HiMPM	Main Process Module	HiMPM-V1.2-120307	HiMPM	V2.2.X	
HiAI16	Analogue Input for mA Unit	HiAI16-V1.2-120416	A2KDS-IO.hex	V2.2.X	
HiRT16	Analogue Input for PT100 Unit	HiRT16-V1.2-120416	A2KDS-IO.hex	V2.2.X	
HiAO08	Analogue Output	HiAO08-V1.2-120416	A2KDS-IO.hex	V2.2.X	
HiDI16	Digital Input Unit	HiDI16-V1.2-120416	A2KDS-IO.hex	V2.2.X	
HiDO16	Digital Output Unit	HiDO16-V1.2-120416	A2KDS-IO.hex	V2.2.X	
HiEAS-M	Extension Alarm System Manager Unit	HiEAS-M-V1.0-090921	Cancv	V2.2.X	
HiEAS	Extension Alarm System Unit	HiEAS-V1.0-090921	A2KDS-EAS.hex	V2.2.X	
Noise filter	A2B210-BB				EMC filter

SW for server has the following revision no's (Windows 2000, Windows XP professional or Windows 7):

Execute files	
Name	Version
AcoSvrEx.exe	V 2.2.X
AlmSvrEx.exe	V 2.2.X
LogSvrEx.exe	V 2.2.X
HiView.exe	V 2.2.X

Place of manufacture

SAN Engineering Co., Ltd.
#4F, 546 Dunchon-daero, Jungwon-gu, Seongnam-si, Gyeonggi-do, Republic of Korea

Application/Limitation

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
- Test program for certification

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

For EAS unit installed on the bridge, external arrangement shall be provided in order to initiate an alarm in case of failures such as loss of power supply or broken cable connection to the main alarm system in the engine room. Reference is made to DNV Rules for Classification of Ships Pt.6 Ch.2 Sec.2 2.3.2.4.

Third party equipment (such as e.g. system server) to be clearly identified in the approval documents. HD Hyundai Marine Solution to ensure compliance with the environmental requirements in Pt.4 Ch.9 Sec.5 for third party equipment when such are used in a system delivery.

The current software numbers and versions are listed in document, W1D0-AA-ASRL_Rev.23 "Application software 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 a new functional type test may be required, and the certificate may have to be renewed to identify the new software version.

Noise filter 'A2B210-BB' shall be inserted at the power supply terminals according to manufacturer's installation manual.

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.

Type Approval documentation

Tests carried out

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

Compass safe distance was tested in accordance with IEC60945:2002 for the following components:

Description	Safe distance (cm)	
	In the standard compass	In the steering compass
Monitor (HD190DPM)	65	40
EAS (HiEAS)	65	40
Keyboard (HiFNKEY)	105	65

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.

A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE