DNV·GL

Certificate No:
TAA000017S

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Programmable Electronic System

with type designation(s)
Marine-DEO:, DOSS, DOSS_H, DOHS, TSS, DOGS, DOPC IV, DGPL II, DOPL II, DOPL II S, FLC

Issued to
Azbil Corporation
Fujisawa Kanagawa Pref., Japan

is found to comply with
DNV GL 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 GL.

Location classes:

Type	Temperature	Humidity	Vibration	EMC	Enclosure
Marine-DEO:					
DOSS, DOSS_H, DOHS, TSS, DOGS	**A/B***	**B**	**A**	**B**	**Required protection according to relevant rules shall be provided upon installation on board**
DOPC IV, DGPL II, DOPL II, DOPL II S, FLC	**A/B***	**B**	**A**	**A**	

*** Class B: Base unit I/O, Distributed I/O, Signal Unit I/O, Signal Unit I/O II, CVT, DOPC IV, FLC, DGPL II, DOPL II**

Issued at **Høvik** on **2017-07-05**
This Certificate is valid until **2022-07-04**.
DNV GL local station: **Yokohama**

for **DNV GL**

Approval Engineer: **Nils Jarem**

Odd Magne Nesvåg
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.

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Product description

Integrated Mrine Monitoring and Automatic control System: Marine-DEO
Refer to Marine DEO Model no List for LR for details.

Product	Type Designation	Model No.
Supervisory Station	DOSS	JS-F65221SA1E JS-F65221SA2E JS-F65221SA3E JS-F65221SB1E JS-F65221SB2E JS-F65221SB3E JS-F6522ASA1E JS-F6522ASA2E JS-F6522ASA3E JS-F6522ASB1E JS-F6522ASB2E JS-F6522ASB3E
Supervisory Station	DOSS_H	JS-F65B3ASA2E JS-F65B3ASA3E JS-F65B3ASB1E JS-F65B3ASB2E JS-F65B3ASB3E
History Station	DOHS	JS-F65B2ASA2E JS-F65B2ASA3E JS-F65B2ASB1E JS-F65B2ASB2E JS-F65B2ASB3E
Process Controller IV	DOPC IV	HD-MBU200 HD-BPS400 HD-XBM400 HD-DCDDB00 HD-ETM400 HD-MSC400 HD-TRM400
General Purpose Linker	DGPL II	HD-DGB311S
PLC Linker	DOPL II / DOPL II S	HD-PLB311S HD-PLBS401S
Thin-client Supervisory Server	TSS	Refer to Station and Server
Gateway Station	DOGS	JS-F65211SA1E JS-F65211SA2E JS-F65211SA3E JS-F65211SB2E JS-F65211SB3E JS-F6521ASA1E JS-F6521ASA2E JS-F6521ASA3E JS-F6521ASB1E JS-F6521ASB2E JS-F6521ASB3E
Station and Server	EM-6535, EM-6545, TX1320M2 for: DOSS/HSS/DOGS/DOBS/DOSS_H/HSS_H/DOHS/TSS	HD-F66 x x x x x (EM-6535) HD-F67 x x x x x (EM-6545) HD-PA2 x x x x x (TX1320M2) Refer to Marine DEO Model no List for LR for details.

Product	Type Designation	Model No.
CVT dc power supply unit x output capacity y input power frequency z input voltage and hold time	CVT dc power supply unit	JS-ST x y z: x X: 24V,20A Z: 24V,10A y 5: 50Hz, 6: 60Hz z 1: 115VAC, 70ms 2: 230VAC, 70ms 3: 105VAC, 70ms 5: 115VAC, 200ms 6: 230VAC, 200ms 7: 105VAC, 200ms
Harmonas-FLeX Distributed Controller	FLC	HD-FXAIPB10 HD-FXAITP HD-FXAOPB00 HD-FXAOPB10 HD-FXAOTP HD-FXDIPB00 HD-FXDITP HD-FXG7ITP HD-FXDOPB00 HD-FXDOTP HD-FXG7OTP HD-FXPIPB00 HD-FXPITP HD-FXRTDPB01 HD-FXLIPS00 HD-FXESTPB00 HD-FXSIPB00M HD-FXSIPB00W HD-FXSIPB00B HD-FXSCTP00 HD-FXBUC20 HD-FXPS20 HD-FXFLC23PE HD-FXFLC24PE HD-FXFLC23P HD-FXFLC24P HD-FXCTC04 HD-FXEXTMB00 HD-FXEXTTP00 HD-FXFLE20P HD-FXEXTSB00
I/O Modules	Distributed I/O	HD-CAAU00 HD-CAOBR00 HD-CAOBR10 HD-CAOBS00 HD-CAOBS10 HD-CAOM00 HD-CAOPR00 HD-CAOPR10 HD-CAOPS00 HD-CAOPS10 HD-CDIBS00 HD-CDIBS05 HD-CDIM00 HD-CDIM05 HD-CDIPS00 HD-CDIPS05

Product	Type Designation	Model No.
		HD-CDIRBS00 HD-CDIRPS00 HD-CDIRT00 HD-CDOBS00 HD-CDOM00 HD-CDOPS00 HD-CDORBS00 HD-CDORPS00 HD-CDORT00 HD-CDUPS00 HD-CEXT10 HD-CEXTB00 HD-CHABR00 HD-CHABR10 HD-CHABS00 HD-CHABS10 HD-CHAM00 HD-CHAPR00 HD-CHAPR10 HD-CHAPS00 HD-CHAPS10 HD-CLABS00 HD-CLAM00 HD-CLAPS00 HD-CPIBR00 HD-CPIBR10 HD-CPIBS00 HD-CPIBS05 HD-CPIBS10 HD-CPIM00 HD-CPIM05 HD-CPIPR00 HD-CPIPR10 HD-CPIPS00 HD-CPIPS05 HD-CPIPS10 HD-CRABS00 HD-CRAM00 HD-CRAPS00 HD-CSAB00 HD-CSIBS00 HD-CSIM00M HD-CSIM00S HD-CSIM00Y HD-CSIPS00M HD-CSIPS00S HD-CSIPS00Y HD-CSPC00 HD-CHSM00MB HD-DSM00 HD-CEXT200/250/250B HD-CHSBS00 HD-CHSPS00MB HD-CXAD11 HD-CXAD21 HD-CEXT12/60

Product	Type Designation	Model No.
		HD-CEXTB12 HD-CEXTP12/60 HD-CRTX00 HD-CRTXB00 HD-CRTXP00 HD-CRTX11 HD-CRTXB11 HD-CRTXP11
I/O Modules	Base Unit I/O	HD-AOM100H-5 HD-HAM100H-5 HD-LAM70H-5 HD-RAM70H-5 HD-PIM70H-5 HD-DIM70H-5 HD-DOM70H-5 HD-DOM80H-5 HD-AOF100-5 HD-HAF100-5 HD-RAF70H-5 HD-PIF70H-5 HD-DIF70H-5 HD-DOF70H-5 HD-DOF80H-5 HD-MBU95H HAS-RTP00 HAS-ARTP11 HAS-RTP20 HAS-RTP50 HD-RTP61 HAS-RTP70 HAS-RTP80 HAS-RTP11 HAS-RTP30 HD-AOM100-5 HD-HAM100-5
I/O Modules	Signal Unit I/O	HD-SHLU00 HD-SAOU00 HD-SRTU00C HD-SACU00 HD-SXCM10-4 HD-SXCM10-5 HD-SXCM10-6 HD-SXCM10-7 HD-SXCM10-9 HD-SBU00-0 HD-SBU00-1 HD-SBU00-2 HD-SXCV10 J-SXCV10 HD-SPU08 HD-SPU07

Product	Type Designation	Model No.
I/O Modules	Signal Unit I/O II	HD-SXCM50C-4 HD-SXCM50C-6 HD-SPDU50LC-5 HD-SBU50LC HD-SBU51LC-DO HD-SBU52LC-SO HD-SBU52LC-RO HD-SBU51LC-DI HD-SBU51LC-SK HD-SBU52LC-RI HD-SBU52LC-SI HD-SPDU50RC-5 HD-SBU50RC HD-SBU52RC-SO HD-SBU51RC-DO HD-SBU52RC-RO HD-SBU51RC-DI HD-SBU51RC-SK HD-SBU52RC-RI HD-SBU52RC-SI HD-SACU50C HD-SRTU50C HD-STCU50C HD-SHLU50C HD-SAOU51C HD-SDIM50C-5R HD-SDOM50C-5R HD-SDIM50C-5M HD-SDIM55C-5M HD-SDIM55C-5R HD-SDOM50C-5M
Network		HD-CNVTXFX HD-GNDBK5 HD-HUB5T8 HD-ICN5JK HD-TRM5NJ HD-SPR12 HD-SWHUBX16 HD-SWHUBX31 JS-FLSCS JS-FLBAS JS-FLTXP JS-FLFXP JS-FSCNV NX-SWAR00400S

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, 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 GL 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 GL for evaluation and approval before implemented on board. Certification of modified functionality may be required for the particular vessel.

Application/Limitation

During mounting of the units onboard, the possibility of unwanted vibrations should be considered.

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

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