TYPE APPROVAL CERTIFICATE

DNV·GL

This is to certify:

That the Engine Safety, Control and Alarm System

with type designation(s)
InteliDrive DCU Marine

Issued to
ComAp a.s.
Praha 8, **Czech Republic**

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 see page 2 and 3.

Issued at **Hamburg** on **2018-03-29**

This Certificate is valid until **2020-03-28**.
DNV GL local station: **Prague**

Approval Engineer: **Jens Dietrich**

for **DNV GL**

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Joannis Papanuskas
Head of Section

Place of manufacture

TOROLA electronic, spol. s r.o.
Nádražní 906,
744 01 Frenštát pod Radhoštěm,
Czech Republic

Product description

InteliDrive Marine controller is a engine safety, control and monitoring system, consisting of:

System hardware components		
HW type	**HW version**	**HW description**
ID-DCU-Marine	2.0	InteliDrive control unit
ID-MCU	2.0	Specific customer brand-labeled standard version of ID-DCU-Marine
ID-RPU	2.0	InteliDrive redundancy protection unit
ID-COM	2.0	InteliDrive communication unit
I-RB16	1.0	Relay board
I-RP	2.0	Specific customer brand-labeled standard version of I-RD-CAN
IS-BIN 16/8	3.0	Extension unit
IGS-PTM	2.2	Extension unit
IGL-RA15	1.4	External LED indication panel
IG-MU	2.2	Multiple engine modem interface
IG-IB	2.0	Internet interface
Inteli IO8/8	1.0	Extension unit
Inteli AIN8	1.0	Extension unit
Inteli AIN8TC	1.0	Extension unit
IS-AIN8	5.2	Extension unit
IS AIN8TC	5.2	Extension unit
Inteli Vision 5 CAN Backlit	1.2	Colour display
Inteli Vision 8 Marine	1.1	Coluor display
Inteli Vision 12T	1.0	Touch Colour display
IB-NT	2.0	Internet Bridge
I-AOUT8	1.1	8 analogue output interfaces
I-RB8	1.0	Relay board
I-LBA	1.0	Low battery adapter
I-LB+	1.1	Communication bridge
I-CR	1.2	CAN repeater

System components location classes					
Hardware type	**Location classes**				
	Temperature	**Humidity**	**Vibration**	**EMC**	**Enclosure**
ID-DCU-Marine	**B/D****	**B**	**B**	**A**	**B***
ID-MCU	**B/D****	**B**	**B**	**A**	**B***
ID-RPU	**B**	**B**	**B**	**A**	**B***
ID-COM	**B**	**B**	**B**	**A**	*****)**
I-RB16	**B**	**B**	**B**	**A**	*****)**
I-RP	**B/D****	**B**	**B**	**A**	**B***
IS-BIN 16/8	**B**	**B**	**B**	**A**	*****)**

IGS-PTM	**B**	**B**	**B**	**A**	***)**
IGL-RA15	**B**	**B**	**B**	**A**	***)**
IG-MU	**B**	**B**	**B**	**A**	***)**
IG-IB	**B**	**B**	**B**	**A**	***)**
Inteli IO8/8	**B**	**B**	**B**	**A**	***)**
Inteli AIN8	**B**	**B**	**B**	**A**	***)**
Inteli AIN8TC	**B**	**B**	**B**	**A**	***)**
IS-AIN8	**B**	**B**	**B**	**A**	***)**
IS-AIN8TC	**B**	**B**	**B**	**A**	***)**
Inteli Vision 5 CAN Backlit	**B**	**B**	**B**	**A**	**B***
Inteli Vision 8 Marine	**B**	**B**	**B**	**A**	**B***
Inteli Vision 12T	**B**	**B**	**B**	**A**	**B***
IB-NT	**B**	**B**	**B**	**A**	***)**
I-AOUT8	**B**	**B**	**B**	**A**	***)**
I-RB8	**B**	**B**	**B**	**A**	***)**
I-LBA	**B**	**B**	**B**	**A**	***)**
I-LB+	**B**	**B**	**B**	**A**	***)**
I-CR	**B**	**B**	**B**	**A**	***)**
*) Panel front only **) Temperature class D: When heating of display is included ***) Required protection according to the Rules to be provided upon installation on board					

Basic:
 - ID-DCU-Marine-3.x.mhx
 - ID-VP-Marine-3.x.mhx
Application:
 - DCU-Marine-AUX-3.x.aid (auxiliary)
 - DCU-Marine-EME-3.x.aid (emergency duty)
 - DCU-Marine-CMB-3.x.aid (combined, harbour + emergency)
 - DCU-Marine-PRP-3.x.aid (variable speed)
 - VP-Marine-AUX-3.x.aid (auxiliary)
 - VP-Marine-EME-3.x.aid (emergency duty)
 - VP-Marine-CMB-3.x.aid (combined, harbour + emergency)
 - VP-Marine-PRP-3.x.aid (variable speed)

Maintenance of firmware is decribed in documents „ID-DCU-Marine-Global-Guide-3.x" and „InteliDrive DCU Marine 3.x New Feature List 3.x.

Application/Limitation
The system is suitable for auxiliary duties, emergency duties and multi engine propulsion systems.
Engine commands password protection option shall be set to level 0 (no password protection) or disabled for vessel classed according to DNV GL Rules and /or DNV GL Offshore Standard.

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

The following documentation of the actual application is to be submitted for approval in each case:
- Reference to this Type Approval Certificate
- Specifications for Engine and/or reference to engine Type Approval Certificate
- System block diagram (showing independency between Safety System and Control and Monitoring System, including sensors separation)
- Power supply arrangement (may be part of the System block diagram)

- List of controlled and monitored points showing alarms and safety functions (including type, range and threshold)
- Software versions for particular delivery
- Test program for certification

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, preferably at the engine/system application maker integrating control, monitoring and safety 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 GL for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

Type Approval documentation
Ring binder containing:
- Brochures InteliDrive DCU Marine
- User Guide ID-DCU Marine
- User Guide DriveConfig
- Inteli Communication Guide
- User Guide WinScopeQ
- System Architecture Description
- Test report electrotechnical testing institute, Test report No.: 402975-01/01
- Test report electrotechnical testing institute, Test report No.: 402956-01/01
- Test report electrotechnical testing institute, Test report No.: 403805-01/01
- Test report electrotechnical testing institute, Test report No.: 403844-01/01
- Test report electrotechnical testing institute, Test report No.: 403808-01/01
- Drawings: circuit board layout, InteliDrive simulator
- New features of ID-DCU Marine 1.4, dated October 2006.

Report, New Features of ID-DCU- Marine-1.5, dated July 2007
Report, New Features of ID-DCU-Marine-1.6, dated January 2008
Report, New Features of ID-DCU-Marine-2.1, dated February 2012

Extension 2014:

Technical documentation (stored in 2014_Inteli_DCU_techdoc.zip)

Document name:	Document no.:	Revision:	Date:
Extension modules for ID-DCU, IGS-NT gen-set or engine controllers Accessory Modules Reference Guide	---	----	June 2014
InteliDrive DCU Marine and ID-RPU independency test	---	---	2014-03-07
New Features of ID-DCU-Marine-2.1.1	---	---	April 2014
InteliMonitor Monitoring and SCADA software to be used with ComAp controllers from following product lines: InteliGen, InteliSys, InteliLlite, InteliGen-NT, InteliSys-NT, InteliLite-NT, InteliCompact-NT, InteliPro	---	3.0	June 2013

EMC and ENV test reports documentation (stored in 2014_Inteli_DCU_EMC_ENV.zip)

Document name:	Document no.:	Revision:	Date:
Material Declaration – Asbestos	---	---	2014-06-18
EMC test report for IB-NT	104722-01/01	01	2012-01-11
ENV Test report for IB-NT	403941-01/01	---	2014-09-15

EMC test report for IB-NT	403346-01/02	02	2014-09-11
EMC test report for Inteli AIN8, Inteli AIN8TC, Inteli IO8/8, InteliVision - version 5 CAN Backlit, IB-NT, IS-NTC-BB	302523-01/02	02	2013-07-24
ENV Test report for Inteli AIN8, Inteli AIN8TC, Inteli IO8/8	302523-01/01	---	2013-07-26
EMC test report for Inteli AIN8	400326-01/02	---	2014-02-20
ENV test report for Inteli AIN8, Inteli AIN8TC, Inteli IO8/8, InteliVision - version 5 CAN Backlit, IB-NT, IS-NTC-BB	302523-01/02	---	2013-07-24
EMC test report for Inteli AIN8TC	400328-01/02	---	2014-02-20
EMC test report for Inteli IO8/8	301356-01/02	---	2013-05-14
EMC test report for InteliVision	901598-01/02	---	2009-10-15
Needle flame test report for InteliVision	901598-01/01	---	2009-10-08
High Voltage test report for InteliVision	901598-01/03	---	2009-11-26
ENV test report for InteliVision	260314-09-TAC	---	2009-10-22
EMC test report for IN-NTC-BB, IV5 RD	004726-01/01	---	2011-04-19
ENV test report for IS-NTC-BB (IM-NTC-BB, IG-NTC-BB, IM-NT-BB, IG-NT-BB) and InteliVision 5 CAN Backlit	304982-01/01	---	2013-10-31
ENV test report for IS-NTC-BB, InteliVision 5	260303-11-TAC	---	2011-05-25
ENV test report for InteliVision 5 CAN BL	260305-11-TAC	---	2011-05-25
EMC test report for InteliVision 5 CAN BL	103598-01/01	---	2012-03-15
EMC test report for ID-DCU-Marine, I-RD-CAN, ID-COM, IS-BIN16/8, IS-AIN8, IGS-PTM, IGL-RA15, I-RB16, IG-MU, IG-IB	402956-01/01	---	2004-10-06
ENV test report for ID-DCU-Marine, I-RD-CAN, ID-COM, IS-BIN16/8, IS-AIN8, IGS-PTM, IGL-RA15, I-RB16, IG-MU, IG-IB	402975-01/01	---	2004-09-23
IP test report for InteliVision 5 CAN and InteliVision 5 CAN Backlit	405003-01/01	---	2014-11-13
IP test report for InteliVision 8 and InteliVision 8 Marine	405106-01/01	---	2014-11-19
EMC test report for Display InteliVision 5 CAN BL	203069-01/01	---	2012-08-23
EMC and ENV test report for IG-NT, IS-NT part I	603501-01/01	---	2006-11-30
EMC and ENV test report for IG-NT, IS-NT part IIa	603501-01/02	---	2006-11-30
EMC test report for IG-NT, IS-NT part IIb	603501-01/02	---	2006-11-13
Vibration test report for IG-NT, IS-NT part III	603501-01/03	---	2006-11-16
Vibration test report for IG-NT, IS-NT part IV	603501-01/04	---	2006-11-30

DNV GL Hovik (MCANO382) Periodical Assessement Report for A-13170, dated 2014-06-20.

Update 2018:
Doc. "ID-DCU Marine Changes": HW 1.01->2.0, SW 2.2->3.0;
Additional Test Reports: ezu 703780-01/01, dated 2017-11-20; ezu 703437-01/01.
Vibration and shock test report VZLU Test, a.s., no. P-VZLUTEST-343/17.
Test reports for Inteli Vision 12T ezu 505059-01/01, ezu 600885-01/01.
Test report of SW changes ID-DCU-Marine-3.x, witnessed 2018-02-15.
DNV GL Prague Periodical Assessment Report, dated 2018-02-23.

Tests carried out

Applicable tests according to DNV GL CG-0339, Nov.2016
InteliDrive DCU Marine and ID-RPU independency test, Prague, 2014-06-20
Test for SW-Changes 3.x, Prague, 2018-02-15.

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, after 3.5 years and at renewal of this certificate.

END OF CERTIFICATE