TYPE APPROVAL CERTIFICATE

This is to certify:

That the Power Management, Generator Control-, Monitoring- and Protection System

with type designation(s)
InteliSys - NT and InteliGen - NT

Issued to
ComAp a.s.
Praha 7, **Czech Republic**

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Location classes can be found on pages 2 and 3.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Issued at **Hamburg** on **2018-12-05**

for **DNV GL**

This Certificate is valid until **2023-12-04**.
DNV GL local station: **Prague**

Approval Engineer: **Jens Dietrich**

....

Joannis Papanuskas
Head of Section

Product description

NT InteliSys-NT, InteliGen-NT and InteliMains are flexible control, monitoring and protection systems with inbuilt solution from single generator unit up to complex Power Management System. Controllers can also manage genset, generator, shaft generator, electric motor, shore connection and bus tie breaker application etc. Control units are extendable by I/O extenison modules, communication modules and multiple HMI, extra control, protection logic can be provided via inbuilt PLC Editor function.

System hardware components		
HW type	**HW version**	**HW description**
IS-NTC-BB	2.0	Power generation control unit
IG-NT(C)-BB	2.0	Power generation control unit
IG-NT(C)-(LT)-(GC)	1.3	Power generation control unit
IM-NT-LT	1.3	Breaker control unit
IM-NT-GC	1.3	Breaker control unit
IM-NT(C)-BB	2.0	Breaker control unit
InteliVision 5 CAN Backlit	1.2	5,7" TFT Colour display
InteliVision 8 Marine	1.1	8" TFT Colour display
InteliVision 12TOEM	1.0	12,1" Colour multi touchscreen
I-AOUT8	1.1	8 analogue output interfaces
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
IS-BIN16/8	3.0	Extension unit
IGS-PTM	2.2	Extension unit
IGL-RA15	1.3	Remote Annunciator
I-CB (all types)	1.2	Communication unit for ECU
I-CR	1.2	CAN repeater
I-LB+	1.1	Communication bridge
IB-NT	2.0	Internet Bridge
I-RB16	1.0	Relay Board
I-RB8	1.0	Relay board
I-LBA	1.0	Low battery adapter
IG-MTU 2-1	2.2	Transformer Unit for galvanic separation
IG-MTU/MARINE	2.2	Transformer Unit for galvanic separation
IG-AVRi-Marine	1.1	AVR interface
IG-AVRi-TRANS-Marine	1.0	Power supply for IG-AVRi-Marine
IGS-LSM+PMS Dongle	1.0	HW key for enabling PMS and loadsharing function

System components location classes					
Hardware type	**Location classes**				
	Temperature	**Humidity**	**Vibration**	**EMC**	**Enclosure**
IS-NTC-BB	**B**	**B**	**B**	**A**	***)
IG-NT(C)-BB	**B**	**B**	**B**	**A**	***)
IG-NT(C)-(LT)-(GC)	**B**	**B**	**B**	**A**	***)
IM-NT-LT	**B**	**B**	**B**	**A**	***)
IM-NT-GC	**B**	**B**	**B**	**A**	***)

IM-NT(C)-BB	**B**	**B**	**B**	**A**	******)***
Inteli Vision 5 CAN Backlit	**B**	**B**	**B**	**A**	**B***
Inteli Vision 8 Marine	**B**	**B**	**B**	**A**	**B***
InteliVision 12TOEM	**B**	**B**	**B**	**A**	**B***
I-AOUT8	**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**	******)***
IS-BIN16/8	**B**	**B**	**B**	**A**	******)***
IGS-PTM	**B**	**B**	**B**	**A**	******)***
IGL-RA15	**B**	**B**	**B**	**A**	******)***
I-CB	**B**	**B**	**B**	**A**	******)***
I-CR	**B**	**B**	**B**	**A**	******)***
I-CR-R	**B**	**B**	**B**	**A**	******)***
I-LB+	**B**	**B**	**B**	**A**	******)***
I-RB16	**B**	**B**	**B**	**A**	******)***
I-RB8	**B**	**B**	**B**	**A**	******)***
I-LBA	**B**	**B**	**B**	**A**	******)***
IG-MTU 2-1	**B**	**B**	**B**	**A**	******)***
IG-MTU/MARINE	**B**	**B**	**B**	**A**	******)***
IG-AVRi-Marine	**B**	**B**	**B**	**A**	******)***
IG-AVRi-TRANS-Marine	**B**	**B**	**B**	**A**	******)***
IGS-LSM+PMS Dongle	**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

ANSI Functions for Generator Protection:
59   Overvoltage
27   Undervoltage
47   Phase sequence voltage
81H   Overfrequency
81L   Underfrequency
51   Overcurrent (range 100...200%)
46   Current unbalance
32   Overload
51N+64 Earth Fault
32R   Reverse power

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

Application/Limitation
1. To be mounted in steel cabinet with minimum IP44.
2. As stated in installation manual under "Marine application notes", power supply terminals shall be equipped with additional external component (e.g MCZ OVP CL 24VUC 1.25A or equivalent) for additional surge protection.
3. An additional independent safety system for engine protection will be required to have the system approved according to DNV GL Rules.
4. Marine Application Notes in the IGS-NT Installation Manual are to be observed.

The following documentation of the actual application is to be submitted for approval by the manufacturer of the application system in each case.

- Reference to this Type Approval Certificate
- Functional description
- System block diagram
- Circuit diagrams
- Power supply arrangement (may be part of the System block diagram)
- List of control and monitored points (indication-, alarm-, safety- and protection function list with thresholds, etc.)
- Test program for certification

The Type Approval covers hardware listed under Product description.

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 (i.e. switchboard manufacturer) according to an approved test program 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

Attachment to application form - Date: 07-08-21
Request for Type Approval - Contents. Date: 07-08-21
DNV Application Form
ComAp NT controllers - general info
Comparsion_Table_NT
IG-NT Datasheet
InteliGen GeCon Datasheet
IS-NT Datasheet
IGS-NT-2.0-Operator guide
IGS-NT-2.1-Application guide
IGS-NT-2.1-Installation guide
IGS-NT-2.1-Troubleshooting guide
IGS-NT-2.1-New features
IGS-NT-COMBI-2.1
IGS-NT-COX-2.1
IGS-NT-MINT-2.1
IGS-NT-SPI-2.1
IGS-NT-SPtM-2.1
IGS-NT-GeCon-1.3
InteliMonitor - 2.1
GenConfig - 2.1
Inteli Communication Guide - February 07
WinScope - 1.4
IGS-NT certificate
IGS-NT components
IGS-NT type test-part I. No.: 603501-01/01. Date 30.11.2006
IGS-NT type test-part II. No.: 603501-01/02. Date 30.11.2006
IGS-NT type test-part III. No.: 603501-01/03. Date 30.11.2006
IGS-NT type test-part IV. No.: 603501-01/04. Date 30.11.2006
Type Approval List_HT

EZU LabCertificate-cz-en
EZU ProductCertificate-cz-en
IGS-NT_Conformity_Declaration

Extension 2014:

Technical documentation (stored in 2014_Intelisys_techdoc.zip)

Document name:	Document no.:	Revision:	Date:
Extension modules for ID-DCU, IGS-NT gen-set or engine controllers Accessory Modules Reference Guide	---	----	2014-12
InteliMains NTC BaseBox	CLEIMBB	---	2013-06
Modular Gen-set Controller & accessories HW version declaration	---	---	2014-01-13
New features of GenConfig-3.0	---	3.0	2013-06
New features of IGS-NT-GeCon-MARINE 3.1	---	3.1	2013-11
Compact Controller for Stand-by and Parallel Operating Gen-sets Inteli New Technology Modular Generator Controller Multiple Internal engines application – SW configuration MINT – GeCon	---	3.1	2013-11
Compact Controller for Stand-by and Parallel Operating Gen-sets Inteli New Technology Modular Gen-set Controller Single Parallel Island – SW Configuration SPI-GeCon IG-NT, IG-NTC, IS-NT	---	3.1	2013-11
Compact Controller for Stand-by and Parallel Operating Gen-sets Inteli New Technology Modular Gen-set Controller Single Parallel to Mains – SW configuration SPtM-GeCon IG-NT, IG-NTC, IS-NT Referenge guide	---	3.1	2013-11

Test reports documentation (stored in 2014_Intelisys_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
EMC test report for IS-NTC-BB, IM-NTC-BB, IG-NTC-BB, IM-NT-BB, IG-NT-BB	305245-01/01	---	2013-11-19
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

DNV GL Hovik (MCANO382) Periodical Assessement Report for A-12254, dated 2014-06-20

Update 2019:
TA Assessment Report, DNV GL Prague, dated 2018-12-12
IGS-NT-Installation-Guide, SW-version 3.1.0, r3, 08-2018
Test Report Generator Protection IG-NTC IEC60255, Electrotechnical Testing Institute, 803647-01/01
Performance Test Report of InteliGen-NT, InteliSys-NTC, InteliMains-NT, dated 2018-12-12.

Tests carried out

Applicable tests according to DNV GL Class guideline CG-0339, edition November 2016.
Performance Test and Test of Generator protection function for parts of IEC60255.

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 this certificate.

END OF CERTIFICATE