



中国船级社
CHINA CLASSIFICATION SOCIETY

证书编号/Certificate No.
HB22PTB00017_02

型式认可证书
CERTIFICATE OF TYPE APPROVAL

兹证明本证书所述制造厂具备按照下列标准的要求生产本证书所列产品的能力和条件。

This is to certify that the manufacturer stated in the certificate meets the requirements of the standards listed below and is available with the ability and conditions to produce the products described in the certificate.

制造厂/Manufacturer

ComAp a.s.

地址/Address

U Uranie 1612/14a, 170 00 Prague 7, Czech Republic

产品名称/Product

功率管理，发电机控制监测保护系统
Power Management, Generator Control-, Monitoring- and Protection System
电站控制和保护用多功能系统
Multi-Function System for Control and Protection of Generator Plant

附加标志/Notations

无/Nil.

认可标准/Approval Standard

1. 中国船级社《钢质海船入级规范》（2021）及其修改通报第4篇第2&3 章
Chapter 2&3 , Part Four of China Classification Society Rules for Classification of Sea-Going Steel Ships 2021 and its Amendments
2. 中国船级社《钢质海船入级规范》（2021）及其修改通报第7篇第2章
Chapter 2, Part Seven of China Classification Society Rules for Classification of Sea-going Steel Ships 2021 and its Amendments

用于/Intended for

船舶与海上设施/Ships and Offshore Installations

证书有效期至/ This Certificate is valid until 2026年04月05日/ Apr. 05,2026

发证机构/Issued by 中国船级社汉堡分社
CCS Hamburg Branch

签发日期/Date 2022年06月16日
Jun. 16,2022

本证书根据中国船级社规范和相关规定签发。所有证书页为一个整体，必须同时使用。纸质证书每页均须由本社盖章方为有效，电子证书含数字签名方为有效，本证书复印件无效。任何单位和个人均不应摘录或节选本证书的部分内容。有关方对所持证书的真实性有疑问时，可以向本社检验机构咨询。This Certificate is issued pursuant to the Rules of the Society and related regulation. All pages of the certificate are taken as a whole and are used simultaneously. No paper certificate page is valid without bearing the stamp of the Society, no electronic certificates is valid without the digital signature, and no copied form of the certificate is regarded as valid. Any part of the certificate is not to be extracted or abridged by any unit or individual in any form. Related parties who are doubted about the authenticity of the certificate may inquire of the Society or its offices.



Form No: T01.

联系方式/Contact Us, 见本社官方网站/See official web site of the Society (<http://www.ccs.org.cn>)

UTN:P022-42873764

产品明细/Product Description**电站控制和保护用多功能系统/Multi-Function System for Control and Protection of Generator Plant (M0001)**

名称/Name	属性 (值) /Value	单位/Unit
产品名称/Product Name	Power Management, Generator Control, Monitoring and Protection System	
型号/Type	InteliSys - NT, InteliGen - NT, InteliMains	
电源/Power Source	DC 8-36	V
软件版本号/Software Version	See additional pages	
系统组成/System Component	See additional pages	
外壳防护等级/Degree of Protection of Enclosure	IP20, front side for panel mounted IP65	

批准的图纸/Approved Drawings

图纸批准号/ Drawings Approval No. : NP19PPP02627;NP22PPP01355

产品认可试验报告/ Approval Test Report

试验报告编号/ Test Report No. : 210979-01/01
 试验报告日期/ Test Report Date : 2021-07-28
 试验单位/ Laboratory: EZU
 试验单位地址/ Test Address: Pod Lisem 129, 171 02 Prague, Czech Republic

试验报告编号/ Test Report No. : 220850/01_02
 试验报告日期/ Test Report Date : 2022-04-22
 试验单位/ Laboratory: EZU
 试验单位地址/ Test Address: Pod Lisem 129, 171 02 Prague, Czech Republic

试验报告编号/ Test Report No. : 021208-01/02; 021497-01/01; 211062-01/01; 022026-01/01
 试验报告日期/ Test Report Date : 2020-06-29
 试验单位/ Laboratory: Elektrotechnicky zkusebni ustav
 试验单位地址/ Test Address: Pod Lisem 129, 171 02 Prague, Czech Republic

试验报告编号/ Test Report No. : P-VZLUTEST-205/20; P-VZLUTEST-217/21
 试验报告日期/ Test Report Date : 2020-07-01
 试验单位/ Laboratory: VZLU TEST
 试验单位地址/ Test Address: Beranovych 130, 199 000 Prague, Czech Republic

试验报告编号/ Test Report No. : 603501-01/02
 试验报告日期/ Test Report Date : 2006-11-30
 试验单位/ Laboratory: ELECTROTECHNICAL TESTING INSTITUE
 试验单位地址/ Test Address: Pod lisem 129, 17102 Praha 8-Troja, Czech Republic

试验报告编号/ Test Report No. : 603501-01/04
 试验报告日期/ Test Report Date : 2006-11-30
 试验单位/ Laboratory: ELECTROTECHNICAL TESTING INSTITUE
 试验单位地址/ Test Address: Pod lisem 129, 17102 Praha 8-Troja, Czech Republic

试验报告编号/ Test Report No. : 603501-01/01
 试验报告日期/ Test Report Date : 2006-11-30
 试验单位/ Laboratory: ELECTROTECHNICAL TESTING INSTITUE
 试验单位地址/ Test Address: Pod lisem 129, 17102 Praha 8-Troja, Czech Republic

试验报告编号/ Test Report No. : 803647-01/01
 试验报告日期/ Test Report Date : 2008-12-03
 试验单位/ Laboratory: ELECTROTECHNICAL TESTING INSTITUE
 试验单位地址/ Test Address: Pod lisem 129, 17102 Praha 8-Troja, Czech Republic

试验报告编号/ Test Report No. : 603501-01/03
 试验报告日期/ Test Report Date : 2006-11-16
 试验单位/ Laboratory: ELECTROTECHNICAL TESTING INSTITUE
 试验单位地址/ Test Address: Pod lisem 129, 17102 Praha 8-Troja, Czech Republic

试验报告编号/ Test Report No. : 004726-01/01

试验报告日期/ Test Report Date : 2011-04-19

试验单位/ Laboratory: ELECTROTECHNICAL TESTING INSTITUTE

试验单位地址/ Test Address: Pod lisem 129, 17102 Praha 8-Troja, Czech Republic

认可后的产品检验方式/ Method of Product Inspection after Approval

按规范只认可不进行产品检验的产品/The product approved only in term of the rules:

认可后的产品检验由制造厂按本社批准的产品检验计划进行检验, 经检验合格后由制造厂签发合格证明, 并连同该产品的本社认可证书复印件一并交付用户, 制造厂对产品符合公约、法规、本社规范和本社认可的标准规定负责。After approval, product inspection should be carried out by the Manufacturer in accordance with the product inspection scheme approved by the Society. Upon satisfactory inspection, and the Quality Certificate issued by the Manufacturer should be provided to the purchaser together with the copy of the approval certificate issued by the Society. The manufacturer should take responsibility for the product being in compliance with the convention, statutory regulation, the Society rules and the standard accepted by the Society.

认可保持条件/ Maintenance Requirements of Approval

1. 型式认可后, 如果产品及其重要零部件的设计、所用材料或制造方法有所改变, 且影响到产品的主要特性、特征; 或产品的性能指标有所更改, 且超过认可的范围, 则有关图纸和文件应经检验机构审批。并在检验机构认为必要时, 经本社检验人员见证有关试验和进行检查, 其结果应能证实仍符合认可条件。

After type approval, if there are changes to the design, materials used or manufacturing method of the product and important components and such changes affect major characteristics and properties of the product, or property indexes of the product are changed and exceed the scope of approval, related drawings and documents are to be examined and approved by the concerned survey office. Where deemed necessary by the survey office, the surveyor to the Society will go to witness relevant tests and conduct inspection and the results should be able to demonstrate compliance with the approval conditions.

2. 工厂的质量管理体系应保持有效运行, 并且与认可时一致。如果质量管理体系发生改变, 应经原体系认证机构审核并报本社批准。

The quality management system of the factory shall be ensure effective operation, and shall be the same as the situation of approval. If there are any changes to the quality management system, auditing of the original certification organization for quality management system and the society's approval shall be obtained.

3. 认可证书有效期内, 如果出现可能导致本社取消认可的情况, 工厂应及时采取有效的纠正措施。

Within the validity of the approval certificate, if cases occur that may cause the Society to withdraw the approval, the manufacturer should take corrective actions in a prompt and effective manner.

4. 在认可证书有效期内, 本社检验人员可在未经事先通知的情况下对工厂的产品制造过程进行审核, 以验证产品的生产是否符合业经本社批准的图纸和文件。工厂应予以配合。

Within the validity of the approval certificate, the surveyor to the Society may pay unannounced audit to the manufacturing process of the product in order to confirm whether it is in compliance with the drawings and documents approved by the Society. The factory should provide an active cooperation and necessary for the surveyor.

5. 如果属于获得型式认可B 模式证书, 且无需颁发船用产品证书/等效证明文件的情况, 证书获得者应接受本社每年一次的定期审核, 定期审核日为认可证书期满之日对应的每一周年日, 检查工作应在周年日的前后三个月内进行。

If belong to the situation of the product has type approval mode B certificate, and marine product certificate/equivalent document is not necessary, those who have obtained the certificate should be subject to periodical audit every year. The date of periodical audit shall be each anniversary date which corresponds to the date of expiry of the relevant certificate and the periodical audit shall be done within a time span of three months before and after the annual surveillance date.

备注/Remarks

本社已审核了产品厂无石棉声明, 但本社的审核不免除产品厂按照合同关系向订货方保证产品无石棉的责任。

The declaration of asbestos-free submitted by manufacturer has been reviewed by the Society.

However, liability of the manufacturer to guarantee the products are asbestos-free to purchaser under contract will not be exempted.

本证书由原型式认可证书 (No. HB19PTB00041) 变更并换新。

This certificate is modified and renewed from the previous Type Approval Certificate No. No. HB19PTB00041.

中国船级社汉堡分社
CCS Hamburg Branch

注: 本证书含有附页, 共5页

Note: The certificate is attached with additional 5 page(s)

Product description

InteliSys - , InteliGen - 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 extension modules, communication modules and multiple HMI, extra control, protection logic can be provided via inbuilt PLC Editor function.

Basic function of ComAp's controller InteliGen - and InteliSys - and InteliMains - and their HW components:

Breaker feedback-position detection
Protection breaker trip and alarm announcement
Synchronization monitoring and control
Isochronous or Droop control available
Voltage control AVR interface
Frequency control ECU/SG/EMS interface
Engine control, monitoring and protection
Breaker open and close internally or externally
Generator start and stop internally or externally
Load control and transfer (soft loading and unloading)
Load sharing control (Isochronous over inter controller communication)
Var sharing control (Isochronous over inter controller communication)
Generator and bus protection (description in the table below)
Load shedding control

Power Management features:

Load demand start and stop of generators based on relative load reserves
Load demand start and stop of generators based on absolute load reserves
Generators priority control
Running hours equalization
Powerbands control
Generator grouping

Additional functions available in

Gecon Marine firmwares:
Heavy consumers control
Shaft generator control and protection
Emergency generators control
Blackout start

InteliMains -::

Shore connection
Bus tie breakers control

Split/coupled busbars

Dual busbars

Dedicated Heavy consumer, loads and feeders controller

There are additional function as option e.g.:

Inter controller communication redundancy

System hardware components

HW Type			
Controllers	HW	Short Description	Site of production
InteliSys ^{NTC} BaseBox	2.x	Gen-set controller for paralleling applications.	Torola
InteliGen 1000 Marine	1.x	Gen-set controller for paralleling applications.	Torola
InteliGen ^{NTC} BaseBox	2.x	Gen-set controller for paralleling applications.	Torola
InteliGen ^{NT} BaseBox	2.x	Gen-set controller for paralleling applications.	Torola
InteliGen NTC LT	1.x	Gen-set controller for paralleling applications.	Torola
InteliGen NT	1.x	Gen-set controller for paralleling applications.	Torola
InteliGen NTC LT	1.x	Gen-set controller for paralleling applications.	Torola
InteliGen NT LT	1.x	Gen-set controller for paralleling applications.	Torola
InteliMains 1010 Marine	1.x	Mains/Utility/Tie breaker controller	Torola
InteliMains ^{NT} BaseBox	2.x	Mains/Utility/Tie breaker controller	Torola
InteliMains ^{NTC} BaseBox	2.x	Mains/Utility/Tie breaker controller	Torola
Inteli Mains NT	1.x	Mains/Utility/Tie breaker controller	Torola
Inteli Mains NT LT	1.x	Mains/Utility/Tie breaker controller	Torola

Displays			
InteliVision 5	1.x	5,1" colour display for controller	nVision
InteliVision 5 CAN Backlit	1.x	5,1" colour display for controller	nVision
InteliVision 5 CAN Backlit VOLVO	1.x	5,1" colour display for controller	nVision
InteliVision 8 Marine	1.x	8" colour display for controllers	Torola
InteliVision 12Touch	1.x	12,3" colour display for controllers	Mikroelektronika
InteliVision 13Touch	1.x	13" panel PC	Hatteland Technology AS
Other modules			
IG-AVRi/Marine	2.x	AVR Interface	Torola
IG-AVRi-TRANS/Marine	1.x	Power Supply Transformer for IG-AVRi/Marine	Torola
IG-MTU Marine	2.x	AC voltage measurement transformer unit	Torola
IG-MTU-2-1	2.x	AC voltage measurement transformer unit	Torola
IGS-LSM+PMS Dongle	1.x	SW key for Load sharing and Power management	Torola
Inteli AOUT8	1.x	CAN extension module 8 AOUT	Torola
Inteli AIN8	1.x	CAN extension module 8 AIN	Vesla
Inteli AIN8TC	1.x	CAN extension module 8 Thermocouple AIN	Vesla
Inteli AIO9/1	1.x	CAN extension module 9 analog inputs, 1 analog output	Torola
Inteli IO8/8	1.x	CAN extension module 8 I/O	Vesla
IGS-PTM	2.x	CAN extension module, 8xBI, 8xBO, 4xAI, 1xAO	nVision
IS-AIN8	5.x	Analogue Input Module	Torola
IS-BIN16/8	3.x	Binary Input/Output Module	Torola
InternetBridge-NT	2.x	Communication module, internet bridge	Torola
I-CB	1.x	Communication bridge to non-standard protocols	nVision
InteliFieldBus Gateway	1.x	Communication bridge to different Fieldbus protocols	MikroKlima
I-LB+	1.x	Communication module USB, RS232, RS485	nVision
I-LBA	1.x	Low battery adaptor	Torola
Inteli RelayBoard 16	1.x	Relay board with 16 relays	Torola
Inteli RelayBoard 8	1.x	Relay board with 8 relays	Torola
I-CR	1.x	CAN repeater	nVision
IGL-RA15	1.x	Remote annunciator	Torola

ANSI Functions for Generator Protection:

59 Overvoltage
27 Undervoltage
47 Phase sequence voltage
81H Over frequency
81L Underfrequency
51 Overcurrent (range 100...200%)
46 Current unbalance
32 Overload
51N+64 Earth Fault
32R Reverse power

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 CCS Rules.

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

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 CCS for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

System SW Identification		
FW Name	SW	
IS-NT-Gecon-Marine-x.x.x.mhx	3.xx	ComAp
IS-NT-x.x.x.mhx	4.xx	ComAp

IG-NT-BB-Gecon-Marine-x.x.x.mhx	3.xx	ComAp
IG-NT-GC-Gecon-Marine-x.x.x.mhx	3.xx	ComAp
IG-NT-BB-x.x.x.mhx	4.xx	ComAp
IG-NT-GC-x.x.x.mhx	4.xx	ComAp
InteliGen 1000-x.y.z.psi	2.y.z	ComAp
InteliMains 1010-x.y.z.psi	2.y.z	ComAp

*) where x.x.x _ y.z is SW version

Manufacturer ComAp a.s.

Address U Uranie 14a, Prague 7, 170 00, Czech Republic

Place of Production ComAp a.s.

U Uranie 14a, Prague 7, 170 00, Czech Republic

Place of Production TOROLA electronic, spol. s r.o.

Nadrazni 906, Frenstat pod Radhostem, 744 01, Czech Republic

Place of Production NVision Czech Republic a.s.

Klasterni 1, Votice, 259 01, Czech Republic

Place of Production Mikroelektronika spol. s r.o.

Dráby 849, Vysoké Mýto - Litomyšlské Předměstí, 566 01, Czech Republic

Place of Production Vesla s.r.o.

Buštěhradská 223 Dubí, Kladno, 272 03, Czech Republic.

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