

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Control and Monitoring System

with type designation(s)
Rockson Evolution V5

Issued to
Rockson Automation GmbH
Kiel, Germany

is found to comply with
DNV GL rules for classification – Ships

Application :

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

Temperature	B
Humidity	B
Vibration	A
EMC	B
Enclosure	Required protection acc. to DNV-GL Rules shall be provided upon installation on board

This Certificate is valid until **2022-08-18**.

Issued at **Hamburg** on **2020-08-19**

DNV GL local station: **Hamburg**

Approval Engineer: **Jens Dietrich**



for **DNV GL**
 Digitally Signed By:
 Papanuskas, Joannis

Joannis Papanuskas
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.

Product description

System consisting of:
PCs and VDUs (Third party HW not covered by this type approval)

CI-32	32 channel contact input Type M001 online selectable input types: NO and NC contact, frequency, pulse count, time period, flow meter, built-in earth fault monitor
ROX-12	12 channel relay output Type M002
MI-8	8 channel mixed input Type M003, built-in earth fault monitor, online selectable input types: 4-20mA, 0-20mA, 1-5mA, Pt100 thermocouple type K and J, T-802, proximity switch npn and pnp, contact with break and short monitoring
MO-8	8 channel analog current/voltage output Type M018
CFI-1	CAN to fieldbus interface Type M014
XAD	Extension alarm distribution Type M004
XAP	Extension alarm panel Type M005
BUZ	Buzzer with USB port Type M006
PSV	Process server Type M007
XAB	External buzzer (bedroom) Type M008
XAR	External alarm reset panel Type M011

Location class for all above components: see page 1.

Power supply: 24V DC.

This type approval certificate covers hardware and basic software for Evolution V5 System.
System can vary from a simple alarm system to an integrated automation system, comprising:

- Alarming
- Lists of acknowledged and unacknowledged alarms
- Lists of disabled and suppressed alarms
- Alarm and event history with .pdf export
- Stand-by pump control
- Valve control
- Performance monitor for fuel oil consumption calculation
- Tank level measurement with volume and mass calculation and trim and list correction
- Mean value system with slowdown function (i.e. exhaust gas monitoring)
- Extension alarm system for unattended machinery spaces
- Manual engineers call function
- Trend recording and display
- Easy change of parameters and texts, Easy access to controls
- Adaptation to various display sizes, Touch screen capable
- Adaptable to all language character sets

Software versions:

S001	CI-32 Firmware	1.1xx
S002	MI-8 Firmware	1.1xx
S003	XAP Firmware	1.1xx
S004	BUZ Firmware	1.0xx
S008	CFI-1 Firmware	1.0xx
S009	MO-8 Firmware	1.0xx
S011	MI-8 Firmware	1.1xx
S013	CI-32 Firmware	1.1xx
S100	Process Server Software	5.1xx
S200	Extension Alarm System Server Software	5.1xx

Job Id: **262.1-023591-3**
Certificate No: **TAA00000NK**
Revision No: **3**

S220 Extension Alarm System Client Software with SW Fire + Sysfail Alarming 5.0xx
S300 Visualization Client Software 5.0xx

Application/Limitation

The Type Approval covers hardware and basic software 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.

EMC in the range 2 GHz to 6 GHz according to DNVGL-CG-0339, December 2019 has not been documented. EMC up to 6 GHz must additionally be documented for installation on ships contracted for construction on or after 2022-01-01.

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.

When the type approved software is revised (affecting all future deliveries) DNV GL is to be informed by forwarding an updated software maintenance document. If the changes are judged to affect functionality for which rule requirements apply a new type test may be required.

With reference to DNV GL Rules for Classification of Ships Pt.4 Ch.9 the following documentation of the actual application is to be submitted for approval in each case:

- Reference to this type approval certificate
- Reference to valid type approval certificates for other hardware/third party equipment, alternatively datasheets of similar information documenting compliance with environmental requirements in DNV GL Pt.4 Ch.9 Sec.5 [2]
- System block diagram/topology drawing
- Power supply arrangement (may be part of the system block diagram)
- Equipment list
- Functional description
- List of control and monitored points (I/O list, including data transferred on communication links)
- For deliveries of integrated systems a functional failure analysis documenting compliance with requirements for redundancy, segregation and effect of single failures in the system see also Pt.4 Ch.9 Sec.4, [3.2 to 3.4].
- Test program for product certification

Type Approval documentation

Test report : Rockson TR001, EMC TestHaus Report 24/22, Delphi VL2011001JCK.115.01-01, CEcert #411-125.1, -.2, Raytheon ET-05-03-11, Gedis AB2609-001; Product spec. Rockson_20110417.odt, Testspecification 20110707.odt, witnessed 2011-07-12.

Additional Test Reports 2014 (MO-8, CFI-1): CE Cert #413.461.1 Rev.0, CE Cert #413.461.2 Rev.0, CE Cert #413.461.3, CE Cert #413.461.4, CE Cert #413.461.5, CE Cert #413.461.6.

Test Procedure XAP-X, dated 2016-08-09.

Additional EMC Test Report: TREO 252-18, issue 1, dated 2018-07-20.

Type Approval Assessment Report issued by DNV GL Hamburg, dated 2020-08-07.

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Tests carried out

Applicable tests according to DNV GL class guideline CG-0339, November 2016,
Functional tests based on 20110707.odt, Functional tests XAP-X Abnahmereport.

Marking of product

- Components are marked with product name and product number
- Basic SW version and project related configuration is displayed in the system GUI.

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