

Certificate No:

A-13922

File No:

894.80

Job Id:

262.1-000697-3

TYPE APPROVAL CERTIFICATE

This is to certify:**That the General Controller**

with type designation(s)

KFM 92.../93.../82../902/826/903

Issued to

**KFM Regelungstechnik GmbH
HERFORD, Germany**

is found to comply with

Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards**Application :****Location classes:**

Temperature	A/B/D*
Humidity	B
Vibration	A
EMC	A/B*
Enclosure	Panel front: B, Terminals: A

***see page two**This Certificate is valid until **2018-06-30**.Issued at **Høvik** on **2014-09-15**for **DNV GL**DNV GL local station: **Essen**Approval Engineer: **Nils Jarem**

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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.

If any person suffers loss or damage which is proven to have been caused by any negligent act or omission of the Society, then the Society shall pay compensation to such person for his proven direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question. The maximum compensation shall never exceed USD 2 million.

In this provision the "Society" shall mean DNV GL AS as well as all its direct and indirect owners, affiliates, subsidiaries, directors, officers, employees, agents and any other person or entity acting on behalf of DNV GL AS.

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Product description

Industry Controller KFM 92.../ 93...
*Temperature Class D, EMC Class A
Software versions: KFM 2.0

Multi-channel Fault Detectors Series 82 for Single and Chain Alarm Inputs 82.. E
Industry Controller KFM 902/ 93
*Temperature Class A, EMC Class B

Modular malfunction alarm display series 826
Industrial controller KFM 903
*Temperature Class B, EMC Class A

Approval conditions

The following documentation of the actual application is to be submitted for approval in each case:

- Reference to this Type Approval Certificate
- System block diagram
- Power supply arrangement (may be part of the System block diagram)

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

As long as the units are covered by the Type Approval, a product certificate according to Pt.4 Ch.9 Sec.1 A 202 will not be required. Correct configuration and set up for each delivery to be tested during commissioning after installation.

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 for evaluation and approval.

Major changes in the software are to be approved before being installed in the computer.

A Certification of Application Functions may be required for the particular vessel.

Type Approval documentation

Technical description:

92/ 92 E

82.. E

902 E

Test reports:

RMS	2-12/94	dated 94-12-16
ESW	03546.089.95	dated 95-09-15
ESW	03514.035.95	dated 95-01-19
MessTechnik Nord GmbH	05196.041.06	dated 06-03-29
MessTechnik Nord GmbH	05196.042.06	dated 06-03-29
Paconsult	0984A-06	dated 06-03-02

Renewal 2014:

Datasheets: modular malfunction alarm display series 826 E
Industrial controller KFM 903 / 93

Test reports: 06671.217.11 Rev 1.0, 06671.218.11 Rev 1.0, 11-3865 Rev 0

DNV Essen periodical assessment report for A- 11619, dated 2014-07-21

Tests carried out

Tests according to Standard for Certification No. 2.4
EMC tests required for CE marking of product.

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Marking of product

The products to be marked with model name, manufacturer name and serial number.

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 at least every second year and at renewal of this certificate.

END OF CERTIFICATE