TYPE APPROVAL CERTIFICATE

Certificate No:
TAA00000SH
Revision No:
1

This is to certify:

That the General Controller

with type designation(s)
KFM 82, KFM 90, KFM 92, KFM 93, KFM 94, KFM 826, KFM 902 and KFM 903

Issued to
KFM-Regelungstechnik GmbH
Herford, **Germany**

is found to comply with
DNV 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.

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

Issued at **Hamburg** on **2021-09-10**

This Certificate is valid until **2026-09-09**.
DNV local station: **Essen**

Approval Engineer: **Jens Dietrich**

for **DNV**
Digitally Signed By: Rinkel, Marco
Location: DNV GL SE Hamburg, Germany
Signing Date: 15.09.2021 , on behalf of

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

Industry Controller KFM 92…/ 93…and KFM 94
*Temperature Class D, EMC Class A

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

Software versions: KFM 2.0

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 DNV Rules Pt.4 Ch.9 Sec.1 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

Test reports:

RMS	2-12/94	dated 16-12-1994
ESW	03546.089.95	dated 15-09-1995
ESW	03514.035.95	dated 19 01-1995
MessTechnik Nord GmbH	05196.041.06	dated 29-03-2006
MessTechnik Nord GmbH	05196.042.06	dated 29-03-2006
Paconsult	0984A-06	dated 02-03-2006
	No.125/92/034	dated 01-09-1992
	No. 11-3865 Rev 0	dated 22-11-2011
	06671.217.11 Rev 1.0	dated 02-11-2011
	06671.218.11 Rev 1.0	dated 02-11-2011
EMC Test Report	160720#H1	dated 26-07-2016
PHOENIX Testlab	E211760D1	dated 27-08-2021

Technical description / Technical Data Sheet

	821A2. E / 07103009
	822-e1c / 0810205
	826_e2.DOC / 1610209
	902_ve / 1110307
	903_e2.doc / 1610225
	9200_e1.DOC / 1311223
	9400_e1.DOC / 1610216
Software Release Note:	TFT_903Kn_090, 20-08-2021.

Type Approval Assessment Report issued by DNV Essen on 2021-09-10.

Tests carried out

Applicable tests according to Class Guideline DNV-CG-0339, August 2021.

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 after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE