



Marine &amp; Offshore

Certificate number: 20943/C0 BV

File number: AP 3948

Product code: 3831H

*This certificate is not valid when presented without the full attached schedule composed of 7 sections*

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## TYPE APPROVAL CERTIFICATE

*This certificate is issued to*

**KFM Regelungstechnik GmbH**  
Herford - GERMANY

*for the type of product*

**TEMPERATURE CONTROLLERS**

Temperature Controller and Malfunction Display  
Types: KFM 82, KFM 90, KFM 92 and KFM 93

**Requirements:**

Bureau Veritas Rules for the Classification of Steel Ships  
EC Code: 31

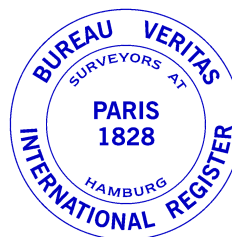
*This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.*

**This certificate will expire on: 14 Jan 2024**

**For Bureau Veritas Marine & Offshore,**

At BV HAMBURG, on 14 Jan 2019,

Dirk Hoepfner



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION:

**Industry controller: KFM 90; KFM 92; KFM 93.**

Inputs: max. 4 measuring inputs, acc. to sub-type:  
 - Pt100, thermo couple, feedback device.  
 - Standard signal 0(4)...20mA, 0(2)...10V.  
 - Up to 16 binary inputs 0/5...24V DC or 230V AC  
 measuring line monitoring

Display: 2 four-figured digital displays or LC displays

Outputs: up to 8 relays with potential free change over switch.

Power supply: - 230V or 115V AC +/-10%, 48...62Hz;  
 - 100...250V AC;  
 - 24V AC/DC

Degree of protection: IP54 (unit), IP20 (Terminals)

Software version: KFM 2.0

### **Malfunction display: KFM 82**

Operating- and fault  
 display input: 230V AC

Input current: 2mA

Power supply: 230V, 115V, 48V AC or 24V AC/DC

Degree of protection: IP54 (unit), IP20 (Terminals)

Software version: KFM 2.0

### 2. DOCUMENTS AND DRAWINGS:

- Note: Documents filed in AP 3948
- 3rReglerssoftware\_Version, dated 19.12.18

### 3. TEST REPORTS:

- MeßTechnikNord GmbH:  
 05196.043.06 dated 29/Mar./2006; 05196.041.06 dated 29/Mar./2006; 05196.042.06 dated 29/Mar./2006
- Regelungs- und Messtechnik:  
 2-12/94 dated 16/Dec./1994
- ESW-Extel Systems Wedel:  
 03546-0.90.95 dated 15/Sep./1995
- Paconsult GmbH:  
 0984A-06 dated 02/Mar./2006

### 4. APPLICATION / LIMITATION:

- 4.1 - Bureau Veritas Rules and Regulations for the Classification of Steel Ships.
- 4.2 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**
- 4.3 - Bureau Veritas Environmental Category, **EC Code: 31.**
- 4.4 - The equipment fulfils the EMC requirements for installation on the Bridge and Deck Zone.

### 5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 - The above mentioned products are to be supplied by **KFM Regelungstechnik GmbH** in compliance with the type described in this certificate.
- 5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.
- 5.3 - **KFM Regelungstechnik GmbH** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products:

**KFM Regelungstechnik GmbH**  
**Planckstr. 2**  
**32052 Herford**  
**GERMANY**

- 5.4 - Equipment is to be supplied with manual(s) for installation, use and maintenance.

**6. MARKING OF PRODUCT:**

- Maker's name or trademark
- Equipment type or model identification
- Date of manufacture and/or serial number

**7. OTHERS:**

7.1 - It is the responsibility of **KFM Regelungstechnik GmbH** to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 20943/B0 BV issued on 17 Dec 2013 by the Society.

\*\*\* END OF CERTIFICATE \*\*\*