

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Level Switches**

with type designation(s)

ABAU, ELS-A, ABRU, ELS-B, A-BV, ELS-S

Issued to

KSR Kuebler Niveau-Messtechnik AG
Zwingenberg, Germany

is found to comply with

DNV GL 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 GL.****Location classes:**

Temperature	B
Humidity	B
Vibration	A
EMC	n/a
Enclosure	B

Issued at **Hamburg** on **2019-01-22**This Certificate is valid until **2024-01-21**.DNV GL local station: **Augsburg**for **DNV GL**Approval Engineer: **Dariusz Lesniewski**

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

By-pass Level Switch for Level Indicator

ABAU, ELS-A: material of float chamber AlMg5 or Buna

ABRU, ELS-B: material of float chamber RG5 or Buna

Process connection: Ermeto - threaded - connection GE 10 - LR

A-BV...-...-M..., ELS-S: material of float chamber stainless steel 1.4571

Process-connection: flange according to DIN/EN, welding stud,
threading stud female or male

Max. operating pressure: 6 bar (ABAU, ELS-A, ABRU, ELS-B)
40 bar (A-BV, ELS-S)

Terminal box material AL with cable glands, connector, compression fitting

Output: 1 c/o contact, rating AC≤230V, 40VA, 1A; DC≤230V, 20W, 0.5A

Degree of protection: IP 65

Approval conditions

The Type Approval covers hardware 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.

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

Marking of product

The products to be marked with:

- manufacturer name:
 - KSR KUEBLER Niveau-Messtechnik AG, 69493 Zwingenberg
 - Shanghai KSR-KUEBLER, 201600 Shanghai, CHINA
- model name
- serial number
- power supply ratings

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