DNV·GL

Certificate No:
TAA00001ZB

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Level Switches

with type designation(s)
OPTISWITCH 5300 C VF534

Issued to
Krohne S.A.S.
Romans Sur Isere, Drome, France

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.

Temperature	**D**
Humidity	**B**
Vibration	**A**
EMC	**B**
Enclosure	**C, D**

Issued at **Hamburg** on **2018-08-10**
This Certificate is valid until **2023-08-09**.
DNV GL local station: **Augsburg**

Approval Engineer: **Dariusz Lesniewski**

for **DNV GL**

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.

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Job Id: **262.1-028584-1**
Certificate No: **TAA00001ZB**

Sensor for point level detection in liquids with tuning fork

OPTISWITCH 5300 C
VF534.a b c de f g h i j k

a	**Scope (approval directive) : A, I, F, C, R, U, G, B, N, M, K**
b	**Approval: M**, **O** and other 1-Digit alphanumeric code for combination with several Ex-Approvals (1)
c	**Version / Material** **K** compact version / Inconel 718 **R** with tube extension / 316L und Inconel 718 **H** with tube extension / Hastelloy C22 und Inconel 718 The extension tube has to be guided at the end and at every further 500 mm
de	**Process Connection / Material** 2-digit alphanumeric code for different flange- or thread variants
f	**Second line of defense /process temperature:** **A** with/ -196…450 °C **X** without / -196…450 °C
g	**Electronics** **R** Relay (2x SPDT) 20...72 VDC/20...253 VAC (5 A) **T** Transistor (NPN/PNP) 9,6...55 VDC **Z** Two wire 8/16 mA 9,6...35 VDC **S** Relay (2x SPDT) 20...72 VDC/20...253 VAC (5 A) SIL **I** Transistor (NPN/PNP) 9,6...55 VDC SIL **L** Two wire 8/16 mA 9,6...35 VDC SIL
h	**Housing / Protection** **K** Plastic / IP66/IP67 **A** Aluminium / IP66/IP67 resp. IP66/IP68 (0,2 bar) **V** Stainless Steel 316L / IP66/IP67 resp. IP66/IP68(0,2 bar)
i	**Cable entry / connection:** **M, S, T, K, U, V, L, O, 2, D, 1, 6, N, Q, J, P, 8, C, R, B, I, F, G, H, W, Z**
j	**Switching Status Indication**: **X** no
k	**Certificate:** **M** yes (e.g. EN 10204-3.1, NACE etc.) **X** no

(1) Ex-Approvals to be requested separately (see manufacturer's web-configurator)

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.

Application/Limitation
Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to DNV GL Rules and Ex-Certification / Special Condition for Safe Use listed in valid Excertificate issued by a notified/recognized Certification Body.

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

END OF CERTIFICATE