



Certificate No:
TAA0000354

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Level Switches

with type designation(s)
OPTISWITCH 6600 C

Issued to

KROHNE S.A.S
Romans-sur-Isère, Drôme, France

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.

Location classes:

Temperature	D
Humidity	B
Vibration	B
EMC	B
Enclosure	B, IP67 with cabled connection

Issued at **Høvik** on **2022-07-08**

This Certificate is valid until **2027-07-07**.

DNV local station: **France CMC**

for **DNV**

Approval Engineer: **Ståle Sneen**

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Marta Alonso Pontes
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: TA 251

Revision: 2021-03

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Product description

KROHNE Level Switch model OPTISWITCH 6600 C, including the following variants:

Article number: VGPA4 abcdefgh

Process connection material

a = 1 Stainless Steel 1.4404 - AISI 316L

Process connection

b = 1 G1/2 A - standard sensor length 15 mm (hygienic)
 2 G1 A - standard sensor length 15 mm
 3 G1/2 A - standard sensor length 15 mm
 4 G1/2 A for reverse mounting
 G 1/2" NPT - standard sensor length 15 mm

Electrical connection

c = 1 M12 – 4-pin connector plug (plastic), with LED
 2 IP67, 5 m non shielded cable
 4 M12 – 4-pin connector plug (stainless steel), no LED

Approvals

d = 0 Without
 3 ATEX II 1G Ex ia IIC T4/T5
 4 ATEX II 1D Ex ta III T100°C Da
 5 ATEX II 1G Ex ia IIC T4/T5 and ATEX II 1D Ex ta III T100°C Da

Output

e = 0 PNP output
 1 NPN output

Output configuration

f = 0 Standard
 1 Customer settings

Other approvals

g = 0 None
 A Food contact
 B Food contact + 3-A® + EHEDG

Surface finish

h = 0 Standard 0.8 µm surface roughness
 1 0.8 µm surface roughness - electro-polished
 2 0.4 µm surface roughness

Power supply: 24 Vdc

The switch has no movable parts due to electromagnetic detection principle and solid state outputs.

Place of manufacture

DNV Id. 135050

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, 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 rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Application/Limitation

The detection principle of the level switches is based on electromagnetic radiation in the range 100 MHz – 180 MHz. The switches are to be applied for level detection in metallic enclosures (tanks, pipes, etc.) in order to satisfy the class requirements for electromagnetic radiation.

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

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.

Marking of product

KROHNE OPTISWITCH

Article number as listed under Product description

Unique serial number

Power 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