



Certificate no.:
TAA00003NH

TYPE APPROVAL CERTIFICATE

This is to certify:
that the Level Switches

with type designation(s)
LBFS-2.xxxxx.x Level switch

issued to
Baumer A/S
Aarhus V, Denmark

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 / C
See Product description	

Issued at **Høvik** on **2025-10-09**

This Certificate is valid until **2030-10-08**.

for **DNV**

DNV local unit: **Denmark CMC**

Approval Engineer: **Nikolai Arntzen**

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 USD 300 000.

Product description

Baumer Level Switch model LBFS-2, including the following variants:

LBFS-2 . 1# 2# 3# 4# 5#. 6# / 9159

1# Compliance and approvals

- 0 Standard
- 3 IECEx / ATEX II 3G Ex ec IIC T4 Gc
- 4 IECEx / ATEX II 1G Ex ia IIC T4 Ga resp. IECEx / ATEX II 1D Ex ta IIC T135 ° C Da
- R Railway (EN50155)

2# Electrical Connection

- 1 M12-A, 4-pin, polycarbonate (with LED)
- 2 Cable outlet 5 m, 4-wire, PVC
- 3 M12-A, 4-pin, stainless steel (without LED)

3# Process Connection

- 1 G 1/2 A ISO 228-1 (G07)
- 2 G 3/4 A ISO 228-1 (G10)
- 3 G 1 A ISO 228-1 (G11)
- 4 G 1/2 A hygienic (A03)
- 5 G 1/2 A ISO 228-1 for reverse assembly (in-shell thread) (T10)
- 6 3/4-14 NPT (N03)
- 7 M18x1 (M11)
- A G 1/2 A DIN 3852 form E, NBR gasket (G51)
- B G 1/2 A DIN 3852 form E, FKM gasket (G51)
- C G 1/2 DIN 3852-E, EPDM
- E G 1/2 A DIN 3852 form E, FKM gasket, with cooling neck (G51)
- F G 1/2 DIN 3852-E, EPDM, w. CN
- G G 1/2 A ISO 228-1 with cooling neck (G07)
- J G 1/2 A hygienic gasket, FKM, with cooling neck (A03)
- K G 1/2 A hygienic, length 82 mm (A03)
- L G 1/2 A hygienic, sliding connection, length 250 mm (A03)
- M 1/2-14 NPT (N02)
- N 1/2-14 NPT with cooling neck (N02)
- \$ Custom (only valid with custom option 9159)

4# Process connection material

- 1 Stainless Steel 1.4301 - AISI 304 (DNV Enclosure class B: IP66 / IP67 / IP69K)
- 2 Stainless Steel 1.4404 - AISI 316L (DNV Enclosure class C: IP66 / IP67 / IP69K)

5# Output Configuration

- 1 PNP output
- 2 NPN output

6# Configuration

- 0 Factory settings
- C Customer-specific

Custom option (optional)

9159 M30x2

Power supply: 24 Vdc

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

Manufactured by:

Baumer A/S

Runetofte 19 Hasle
8210 Aarhus V,
Denmark.

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

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.
Applicable tests according to ISO 20653:2013, IPX9K

Marking of product

Baumer
Type designation 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.