



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. **A-13746**

This is to certify that the
Level Switches

with type designation(s)
BLS

Issued to
Besta AG
USTER, Switzerland

is found to comply with
Det Norske Veritas' Rules for Classification of Ships and High Speed and Light Craft
Det Norske Veritas' Offshore Standards

Application
Location classes:

Temperature	D
Humidity	B
Vibration	B
EMC	B
Enclosure	B / IP67, C / IP67. See page 2

This Certificate is valid until **2016-06-30**.

Issued at **Høvik** on **2014-06-13**

DNV local station: **Essen CMC Southern Germany**

for **Det Norske Veritas AS**

Approval Engineer: **Ståle Sneen**

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Odd Magne Nesvåg
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.
If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

Product description

Besta BLS Level Sensor
Type designation: BLS XX

Type Key	BLS
Standard	10-29 60-99
Gas version: Ex ia IIC T5	30-39
Dust version: Ex ta IIIC T100°C Da	40-49
Category 3: Ex nA II T4/T5, ATEX II 3G	50-59

Electrical connections

Plug, M12, plastic, with LED; Cable 5 meter; Plug, M12, stainless steel, without LED

Process connections

Nipple G 1/2", G 3/4", G 1"

Process connection materials

Stainless Steel 1.4301 – AISI 304, or Stainless Steel 1.4404 – AISI 316

Output configurations

PNP or NPN output

Configuration

No configuration, or configuration according to customer specifications

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 Ships Pt.4 Ch.9 Control and Monitoring Systems.

Application/Limitation

BLS Level Sensor casing material Stainless Steel 1.4404 (AISI 316) is required for use on open deck (DNV Enclosure class C).

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 Standard for Certification No. 2.4, April 2006.

Marking of product

Besta

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

END OF CERTIFICATE