

# TYPE APPROVAL CERTIFICATE

**This is to certify:****That the Level Switches**with type designation(s)  
**CLS50/55 Capacitive Level Switch**

Issued to

**BEDIA Motorentechnik GmbH & Co.KG**  
**Altdorf, Germany**is found to comply with  
**DNV GL rules for classification – Ships, offshore units, and high speed and light craft****Application :****Location classes:****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

<b>Temperature</b>	<b>D</b>
<b>Humidity</b>	<b>B</b>
<b>Vibration</b>	<b>B</b>
<b>EMC</b>	<b>A</b>
<b>Enclosure</b>	<b>D (Depending on connector/cable)</b>

This Certificate is valid until **2023-06-13**.Issued at **Hamburg** on **2018-06-14**for **DNV GL**DNV GL local station: **Augsburg**Approval Engineer: **Didier Girardin**

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**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. If any person suffers loss or damage which is proven to have been caused by any negligent act or omission of the Society, then the Society shall pay compensation to such person for his proven direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question. The maximum compensation shall never exceed USD 2 million. In this provision the "Society" shall mean DNV GL AS as well as all its direct and indirect owners, affiliates, subsidiaries, directors, officers, employees, agents and any other person or entity acting on behalf of DNV GL AS.

Certificate No: **TAA00001X0**  
File No: **895.30**  
Job Id: **262.1-008684-4**

## Product description

CLS50/55 Capacitive Level Switches

Voltage: HV: 9 to 36 VDC  
LV: 4.5 to 18 VDC  
Media: 0: Oil  
1: Water  
2: Oil Special with Oil Shield 2  
Process Connection: xx - Depending on type  
Housing: 2: Stainless Steel  
Electrical Connection: xxxx - Depending on type  
Cable / Cable Gland: xxxx - Depending on type  
Type of Cable: xx - Depending on type  
Length of Cable: 00000 - Without cable  
xxxxx - Length in mm  
Sensor Output: 1: HSS: High Side Switch - 1A (HV type only)  
2: LSS: Low Side Switch - 1A (HV type only)  
3: LSS: Low Side Switch - 0.5A (LV type only)  
4: AOU - Analogue Output Voltage  
5: AOP - Analogue Output Proportional  
Operation Mode: 1: Minimum OC (Operation Current)  
2: Minimum QC (Rest Current)  
3: Maximum OC (Operation Current)  
4: Maximum QC (Rest Current)  
Switch Point: 1xxx - mm From Seal Edge (long feeler)  
2xxx - mm From Seal Edge (short feeler)  
1028 - Default value  
Response Delay: xxxx in Seconds  
Self Test Function: xxxx in Seconds  
Analogue Values: xxx/xxx

## Place of manufacture

BEDIA Motorentchnik GmbH & Co. KG  
Gewerbepark an der A6  
Im Erlet 1  
90518 Altdorf  
Germany

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

## Application/Limitation

When used on tanks containing flammable liquids within machinery space an isolating valve shall be fitted between tank and sensor. This application is not a part of Type Approval and should be approved for each case.

Fixed cable to be of approved type.

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## Type Approval documentation

**Design**                                    **BEDIA Motorentchnik**  
**Documentation:**                        - Description of CLS50/55 dated 2006.03.10  
                                                  - Variants CLS50/55, V1.4 dated 2009.05.05  
                                                  - Overview CLS50 Sensors: CLS\_006\_001V2 dated 2009.08.27, Cross  
                                                  Section CLS50 Sensors CLS\_007\_001V2 dated 2009.08.27, CLS-H\_V1\_5  
                                                  dated 2008.09.17, 1F002 V4\_6 dated 2008.12.18, CLS-A V2.0 dated  
                                                  2008.04.08,  
                                                  - Marking of the product: BES\_CLS50\_001V3 dated 2010-03-05  
**Data Sheets:**                            500131, 500158, 500159, 500162, 500163, 500164  
**Test Reports:**                         Climatic and Mechanical Test Report LGA No.: E4.964-I dated 25.08.2009,  
                                                  ECL-EMC Test Report No. 08-192 v.03 dated 15.12.2009  
                                                  Test Druckfestigkeit CLS50 Gehäuse dated 21.04.2009  
                                                  Performance-Testprotokoll\_500131, 500159, 500162, 500163, 500164.

DNV Essen periodical assessment report for A-11626, dated 2014-06-02.

## 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