



Confirmation of Product Type Approval

Company Name: BACHOFEN AG

Address: 42 ACKERSTRASSE CH 8610 USTER Switzerland

Product: Float Operated Liquid Level Switch

Model(s): Trimod Besta Level Switch, Type: A, B, DA, DB, UA, UB, HA, HB, TDA, TDB, Z, ZHT and ZU

Endorsements:

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	24-2509165-PDA	20-FEB-2024	19-FEB-2029
Manufacturing Assessment (MA)	20-4440981	14-SEP-2020	13-SEP-2025
Product Quality Assurance (PQA)	NA	NA	NA

Tier

3 - Type Approved, unit certification not required

Intended Service

Trimod Besta level switches for marine and offshore applications.

Description

Trimod Besta level switches has three main components; the Switch module, Flange Module and Float Module. They are categorized in to Standard range, Industrial range and Plastic range.

Standard range : Square flange in stainless steel with bolt holes on a 92 mm PCD and a nominal pressure rating of PN 25.

Industrial range : Flanges in accordance to EN/DIN, ANSI or JIS and nominal pressure range up to PN 250 acc. to EN/DIN or class 1500 acc. to ANSI.

Plastic range : Wet side materials are in corrosion resistant plastics such as PP or PTFE.

Ratings

Mounting type: Top or Side

Nominal Pressure Ranges: up to 250 bar;

Operating Temperature Range: -196 to 330 deg C (Rating values are consolidated. Refer product catalogue for individual operating temperature range)

Switch Module:

Type - Electric

Microswitch - SPDT microswitch with silver or gold plated contacts

Type A V15H10-TZ100 (Honeywell)

Type B V15H10-TZ100-A (Honeywell)

Cable Gland - M20 x 1.5 or 3/4" NPT

Enclosure - Die cast aluminum, Chromate die cast aluminum or CrNiMo (SS316)

Enclosure protection - IP65, IP66, IP 67 or IP68

Approval type - Ex eb db IIC T6...T5 Ga/Gb (Hermetically sealed), Ex ia IIC T6 Ga/Gb (Intrinsically safe circuits)

Flange Module:

Type - Square Flange, Fixed Flange or Slip-on Flange

Flange standard - EN/DIN or ANSI (Square flanges as per manufacturer's standard)

Float Module:

Material - CrNiMo (SS316), Hastelloy C, PP or PTFE

Service Restrictions

Unit certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2. Configurations and applications as per manufacturer's specifications.
3. Each particular application is to be approved in conjunction with the relevant systems and tank arrangements.

Notes, Drawings and Documentation

Drawing No. LTKEN2210_LEVEL SWITCH CATALOGUE, Revision: -, Pages: 43

Drawing No. 20141107.A02.01, TEST REPORT, ENL TESTING LABORATORY, Issued on 30 July 2014, Revision: -, Pages: 16

Drawing No. 20141107.A02.02, TEST REPORT, ENL TESTING LABORATORY, Issued on 30 July 2014, Revision: -, Pages: 20

Drawing No. 20181115.A02.01, TEST REPORT, ENL TESTING LABORATORY, Issued on 23 August 2018, Revision: -, Pages: 47

Drawing No. 20231020.A02.01, TEST REPORT, ENL TESTING LABORATORY, Issued on 23 March 2023, Revision: -, Pages: 16

Drawing No. 3016-95, TEST REPORT, TESTLABOR, Issued on 24 May 1995, Revision: 00.1, Pages: 50

Drawing No. LRS-P05, TEST REPORT, LLOYD'S REGISTER OF SHIPPING, Issued on 07 June 1995, Revision: -, Pages: 2

Drawing No. EPS 12 ATEX 1430 X, Rev 2, EU TYPE EXAMINATION CERTIFICATE, BUREAU VERITAS, Issued on 24 October 2022, Revision: 2, Pages: 2

Drawing No. EPS 22 UKEX 1261 X, Rev 0, UK TYPE EXAMINATION CERTIFICATE, BUREAU VERITAS, Issued on 24 November 2022, Revision: 0, Pages: 2

Drawing No. IECEx EPS 15.0038X, IECEx CERTIFICATE OF CONFORMITY, BUREAU VERITAS, Issued on 24 October 2022, Revision: 0, Pages: 4

Drawing No. 20240212, ENVIRONMENT TESTS REPORT, Issued on 12 February 2024, Revision: 1, Pages: 1

Drawing No. STATEMENT OF COMPLIANCE IACS UR E10, Issued on 15 February 2024, Revision: -, Pages: 1

Term of Validity

This Product Design Assessment (PDA) Certificate remains valid until 19/Feb/2029 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

ABS Rules

2024 Rules for Conditions of Classification 1A-1-4/7.7, 1A-1-A3, 1A-1-A4, which covers the following:

2024 Rules for Building and Classing Marine Vessels: 4-6-2/9.11.3, 4-6-4/13.5.6(d), 4-6-4/15.3.4(d), 4-8-3/1.3, 4-8-3/1.7, 4-8-3/1.9, 4-8-3/1.11, 4-8-3/1.13, 4-8-3/1.17, 4-8-3/13, 4-8-4/27.5.1, 4-9-9/13, 4-9-9/15.7 Table 1

2024 Rules for Conditions of Classification – Offshore Units and Structures 1B-1-4/9.7, 1B-1-A2, 1B-1-A3, which covers the following:

2024 Rules for Building and Classing Mobile Offshore Units: 4-2-3/3.7, 4-3-1/9, 4-3-1/11, 4-3-1/15, 4-3-1/17, 4-3-3/9

2024 Rules for Conditions of Classification – High-Speed Craft 1C-1-4/11.9, 1-1-A2, 1-1-A3, which covers the following:

2024 Rules for Building and Classing High-Speed Craft: 4-4-1/9.7.3, 4-4-3/13.7, 4-6-1/9, 4-6-1/11, 4-6-1/15, 4-6-1/17, 4-7-9/15, 4-7-9/15.5 Table 9

International Standards

NA

EU-MED Standards

NA

National Standards

NA

Government Standards

NA

Other Standards

NA



A handwritten signature in blue ink, appearing to read "Joseph W. White".

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 01-Mar-2024 7:26

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.