



CERTIFICATE NUMBER 21-2189475-PDA
EFFECTIVE DATE 19-November-2021
EXPIRATION DATE 18-November-2026
ABS TECHNICAL OFFICE Singapore Engineering Services

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

ENDRESS & HAUSER SE & CO. KG
located at
HAUPTSTR. 1, D-79689 MAULBURG, GERMANY

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product Transducer, Pressure

Model Pressure Transducer Cerabar – PMC 21, PMP 21

This Product Design Assessment (PDA) Certificate remains valid until 18-November-2026 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.

American Bureau of Shipping

Vibin Chandrabose, Senior Engineer

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer’s standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement

ENDRESS & HAUSER SE & CO. KG

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Tier: 2 - PDA Issued

Product: Transducer, Pressure

Model: Pressure transducer Cerabar - PMC 21, PMP 21

Endorsements:

Intended Service:

Liquids, gases, vapours pressure control, alarm and monitoring functions for marine applications.

Description:

Housing made of material stainless steel 316L (1.4404).

Rating:

Pressure ranges: -100 mbar to +100 mbar, -1 bar to +40 bar (PMC 21); -400 mbar to +400 mbar, -1 bar to +400 bar (PMP 21)

Temperature of medium: -25 °C to 100°C (PMC 21); -40 °C to 100 °C (PMP 21)

Power supply: 10...30V DC.

Output: 4...20mA.

Degree of protection: IP 65, IP 65/67, IP 66/68.

Certified safe types: Ex ia IIC T4 Gb, Class I, Zone 1, AEx ia IIC T4 Gb, Class I Division 1, Group A,B,C and D (CSA 70013213), II 1/2G Ex ia IIC T4 Ga/Gb, II 2G Ex ia IIC T4 Gb (SEV 14 ATEX 0134)

Service Restriction:

1. 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.

2. For Passenger Vessels, level switches are not to be installed on flammable oil tanks where they require tank wall penetration below the tank top.

Comments:

1. Each particular application and installation is to be specifically approved in conjunction with the relevant systems and tank arrangements.

2. ATEX certified equipment is not to be installed in hazardous areas on U.S vessels unless it can be proved to have been tested to the applicable IEC 60079 series standards by an independent laboratory accepted by the U.S coast Guard. USCG notice 01-12 (February 7, 2012).

3. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes/Drawing/Documentation:

Treo Report No. 002-18_V1U, EMC Test Report dated 04/04/2018, Revision: 1, Pages: 36

Treo Report No. 023-18_V1U, EMC Test Report dated 04/04/2018, Revision: 1, Pages: 36

Paconsult Report No. 14-6356-BE- PMP 21 PMC 21, Environmental Test Reports dated 26/02/2015, Revision: 0, Pages: 17

Drawing No. 210108095-B Overview PMC21, Overview Drawing, Dated 20/07/2015, Revision: B, Pages: 1

Drawing No. CofC_70116495, CSA Ex Approval, dated 03/03/2017, Revision: 1, Pages: 11

Drawing No. IECEx_SEV 14.0008 Issue 2, IECEx approval, dated 25/03/2021, Revision: 2, Pages: 4

Drawing No. ISO9001, ISO9001 Certificate, dated 05/04/2019, Revision: 1, Pages: 2

Report No. 970005754_IPx7, IP Rating dated 19/05/2016, Revision: -, Pages: 8

Report No. 970005756_IPx6, IP Rating dated 13/05/2016, Revision: -, Pages: 6

Report No. 970005758_IPx5, IP Rating dated 13/05/2016, Revision: -, Pages: 6

Report No. 970005760_IPx8, IP Rating dated 13/05/2016, Revision: -, Pages: 6

Report No. 970005762_Type6P_IPx8, IP Rating dated 03/06/2016, Revision: -, Pages: 4

Report No. 970005764_Type4, IP Rating dated 13/05/2016, Revision: -, Pages: 6

ILAC MRA Report No. 970008496_AK_mit US, EMC Test Report dated 13/09/2021, Revision: 1, Pages: 29

ILAC MRA Report No. 970008497_AK_mit US, EMC Test Report, dated 13/09/2021, Revision: 1, Pages: 29

Drawing No. BA01271PEN_0721, Operating Instructions, dated 31/03/2021, Revision: -, Pages: 48

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Drawing No. Ordercode for PMC21_rev02, Order code PMC21, dated 29/03/2018, Revision: 2, Pages: 2

Drawing No. SEV 14 ATEX 0134 e Endress Issue2, ATEX Approval, dated 25/03/2021, Revision: 2, Pages: 2

Drawing No. TI01133PEN_0721, Technical Information, dated 31/03/2021, Revision: -, Pages: 48

Drawing No. XA01271PEN_0421, Safety Instructions, dated 10/05/2021, Revision: -, Pages: 12

Drawing No. XA01321PEN_0114, Safety Instructions, Revision: -, Pages: 1

Drawing No. XA01322PEN_0217, Safety Instructions, Revision: -, Pages: 1

Drawing No. XA01363PEN_0220, Safety Instructions, dated 23/11/2020, Revision: -, Pages: 8

Drawing No. XA01533PA3_0216, Safety Instructions, dated 20/06/2016, Revision: -, Pages: 20

Terms of Validity:

This Product Design Assessment (PDA) Certificate remains valid until 18/Nov/2026 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.

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STANDARDS

ABS Rules:

2021 Rules for Conditions of Classification 1-1-4/7.7, 1-1-A3 and A4, which covers following:

2021 Rules for Building and Classing Marine Vessel Rules: 4-6-1/3.23, 4-6-2/9.11.2, 4-6-2/9.11.3, 4-6-4/13.5.6(b), 4-6-4/15.3.4(b), 4-8-3/1.7, 4-8-3/1.11, 4-8-3/1.17, 4-9-9/13

2021 Rules for Conditions of Classification – Offshore Units and Structures 1-1-4/9.7, 1-1-A2 and A3, which covers the following:

2021 Rules for Building and Classing Mobile Offshore Units: 4-2-1/3.27, 4-2-1/11.27.2, 4-3-1/11, 4-3-1/15, 4-3-1/17.1, 4-3-4/5

2021 Rules for Conditions of Classification - Light and High Speed Craft 1-1-4/11.9, 1-1-A2 and A3, which covers the following:

2021 Rules for Building and Classing High Speed Crafts: 4-4-1/9.17.2, 4-4-1/9.17.3, 4-6-1/11, 4-6-1/15, 4-6-1/17.1, 4-7-9/15

National:

NA

International:

SOLAS (2020 Consolidated Edition) II-2, Regulation4, Paragraphs 2.2.3.5.2.1, 2.3.1.1 and 2.4 - for flammable oil tanks on Passenger Vessels

Government:

NA

EUMED:

NA

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OTHERS:

NA