



# TYPE APPROVAL CERTIFICATE

Certificate No:  
**TAA000013A**  
Revision No:  
**5**

## This is to certify:

**That the Pressure Transmitter**

with type designation(s)  
**Cerabar PMP21, PMC21**

Issued to

**Endress+Hauser SE+Co. KG**  
**Maulburg, Germany**

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:**

<b>Temperature</b>	<b>B</b>
<b>Humidity</b>	<b>B</b>
<b>Vibration</b>	<b>B</b>
<b>EMC</b>	<b>A</b>
<b>Enclosure</b>	<b>B / D*</b>

**\*Cable version only**

Issued at **Hamburg** on **2023-05-23**

for **DNV**

This Certificate is valid until **2027-04-18**.

DNV local station: **Augsburg**

Approval Engineer: **Dariusz Lesniewski**

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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.

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 300,000 USD.



## Product description

Pressure transducer with metal sensors (PMP21) / ceramic sensors (PMC21) for measure of gauge or absolute pressure in gases, vapors, liquids and dust.

### Device main features:

Process connection: thread

Electrical connection: valve plug, M12 plug or cable

Degree of protection: IP65, IP 65/67 or IP66/68 (IP68 1.83 mH<sub>2</sub>O for 24 h)

Measuring ranges (PMP21) : from -400 to 400 mbar up to -1 to 400 bar

Measuring ranges (PMC21) : from -100 to 100 mbar up to -1 to 40 bar

Supply voltage: 24V nominal

Output: 4-20 mA

Materials (PMP21): housing 316L (1.4404), process connections 316L (1.4404), diaphragm 316L (1.4435)

Materials (PMC21): housing 316L (1.4404), process connections 316L (1.4404) or AlloyC22, diaphragm Al<sub>2</sub>O<sub>3</sub>

### Model designation (ext. order code):

PMP21 010 020 040 070 090 110 550 570 580 590 620 895

Ext. order code	Description	Options
010	Approvals	AA, BA, BB, BC, CA, CB, FA, GA, IA, NA, TA
020	Output signal	4-20mA (2-wire)
040	Electrical connection	A, B, M, U, V
070	Measuring range	1F, 1H, 1K, 1M, 1N, 1P, 1Q, 1R, 1S, 1U, 1W 2F, 2H, 2K, 2M, 2P, 2S, 2U, 2W
090	Calibration / Unit	A, B, C, F, J
110	Process connection	VUJ, VWJ, VXJ, WAJ, WBJ, WJJ, WTJ, WUJ, WWJ, X2J, X3J X4J, ZJJ
550	Calibration	F3
570	Service	HA, IA
580	Test, Certificate	JA, KH
590	Additional approval	LE
620	Enclosed accessories	QA, QB, QC, RM, RZ, R1
895	Marking	Z1

### Model designation (ext. order code):

PMC21 010 020 040 070 090 110 190 550 570 580 590 620 895

Ext. order code	Description	Options
010	Approvals	AA, BA, BB, BC, CA, CB, FA, GA, GR, IA, NA, TA
020	Output signal	1
040	Electrical connection	A, B, C, M, U, V
070	Measuring range	1C, 1E, 1F, 1H, 1K, 1M, 1N, 1P, 1Q, 1R, 1S 2C, 2E, 2F, 2H, 2K, 2M, 2P, 2S
090	Calibration / Unit	A, B, C, F, J
110	Process connection	VUJ, VWJ, VXJ, WAJ, WBC, WBJ, WTJ, WWJ, X2J, X3J X4J, ZJJ
190	Seal	A, J
550	Calibration	F3
570	Service	HA, HB, IA, I7
580	Test, Certificate	JA
590	Additional approval	LE
620	Accessories	RM, RU, RZ, R1
895	Marking	Z1

## 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 DNV Rules and Ex-Certification / Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

## Type Approval documentation

Test Report: paconsult no. 14-6356, dated 26<sup>th</sup> February 2015  
Test Report: MTN no. 071513.001.17 V1.0, dated 2<sup>nd</sup> January 2017  
Test Reports: E+H no. 970004180 (14.02.2014), no. 970004181 (03.02.2014)  
Test Reports: E+H no. 970004182 (03.02.2014), E+H no. 970004183 (03.02.2014)  
Test Report: E+H no. 970004184 (03.02.2014)  
Test Reports: E+H no. 970006606 (28.03.2018), E+H no. 970006607 (28.03.2018)  
Test Reports: E+H no. 970008496 (13.09.2021), E+H no. 970008496 (13.09.2021)  
Test Reports: TREO no. 002-18 and 023-18, dated 4th April 2018  
Technical Report: Kabel Sterner no. 51718\_51744, dated August 2017  
Data Sheet: TI01133P/00EN/05.17  
Order Code Information, Order code for Cerabar PMC21 Rev. 03  
Circuit diagram – Document no. 960016585 –B  
Drawings: 210108140--1, 210108095 Ver. B, Transducer Line Druck  
Material Data Sheets  
Cable Data Sheets: KS-LiY11Y 3xAWG20/19+PA 1,5/2,5mm Ver. 1/1  
EC-Type Examination Certificate: SEV 14 ATEX 0134  
CSA Certificate of Compliance no. 70013213  
Type approval initial assessment report issued at Augsburg on 2021-12-16

## Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.

## Marking of product

The products to be marked with:

- manufacturer name
- model name
- Ext. order code
- power supply 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.

END OF CERTIFICATE