



Type Approval Certificate

[Pressure Transmitter]

Initial Approval 2 February 2017
Manufacturer Endress+Hauser SE+Co. KG
 Hauptstr. 1, D-79689, Maulburg, Germany
Product Description Pressure Transmitter Cerabar M (Type : PMC51, PMP51, PMP55)
 " See Appendix 1 "



Approval Condition " See Appendix 1 "

THIS IS TO CERTIFY that the above-mentioned product has been approved in accordance with the relevant requirement of this Society's Rules and / or of the recognized standards as follows.

Pt. 6, Ch. 2, Art. 301 of the Rules for Classification, Steel Ships.

This Certificate is valid until 1 February 2027

Issued at Busan, Korea on 26 May 2022



This certificate is signed electronically in accordance with IMO FAL.5/Circ.39/Rev.2. Validation and authentication of the certificate can be confirmed from "<http://e-cert.krs.co.kr>" by using the tracking No(ME22014843657) and certificate No.(HMB18553-AE007).



KOREAN REGISTER

*General Manager of
Marine & Ocean Equipment Team*

- Note :**
1. This certificate will be valid subject to complying with the approval conditions described on the certificate and/or on the Rules of this Society.
 2. This certificate will be invalid from the expiry date aforementioned unless the extension or renewal has been granted to the applicant or the manufacturer.
 3. Any significant modifications or changes in design or construction to the above product without approval from this Society will render this certificate invalid.
 4. Should the specified rules, regulations or standards be amended during the validity of this certificate, the product is to be re-approved by this Society in accordance with the requirements as amended.

Product Description and/or Approval Condition

Date of Issue : 26 May 2022

A. Production Description :

- Pressure Transmitter Cerabar M (Type : PMC51, PMP51, PMP55) : Measurement for gas or liquids.

1. Main Characteristics :

Product family	PMC51	PMP51	PMP55
Field of application	Gauge pressure and absolute pressure Level		
Process connections	Threads EN flanges DN25-80 ANSI flanges 1-4" JIS flanges 50-100A	Threads EN flanges DN25-80 ANSI flanges 1-4" JIS flanges 25-100A Prepared for diaphragm seal mount	Wide range of diaphragm seals
Measuring ranges	From -100/0 to 100mbar to -1/0 to 40bar	From -400/0 to 400mbar to -1/0 to 400bar	
Over Pressure Limit	Max. 60bar	M ax. 600bar	
Temperature ranges	-20 to 100°C	-40 to 125°C	-70 to 400°C
Supply voltage	11.5 to 45V DC (versions with plug-in connection 35V DC) For intrinsically safe device versions : 11.5 to 30V DC		
Output	4 to 20 mA, 4 to 20 mA with superimposed HART protocol		
Options	<ul style="list-style-type: none"> - PMP51, PMP55 : NACE-compliant materials - PMC51, PMP51, PMP55 : inspection certificate 2.2 or 3.1 or other cert. - Specific firmware versions - Initial device settings - Separate housing - Broad range of accessories 		

2. Model variants.

1) Cerabar M PMC51

010 = Approval	AA, BA, BD, BE, BF, BG, BI, 8C, IA, IE, IF, I1, CA, CD, FA, FD, 99
020 = Output	1/2 (4-20mA Analog/HART), 9
030 = Display, Operation	1, 2, 9
040 = Housing	I, J, Q, R, S, Y
050 = Electrical Connections	A, B, C, D, I, M, P, S, V, Y
070 = Sensor range	1C, 1E, 1F, 1H, 1K, 1M, 1P, 1S, 2C, 2E, 2F, 2h, 2K, 2M, 2P, 2S, 99
080 = Reference accuracy	D, G, Y
090 = Calibration	A, B, C, D, E, F, J, K, Y
110 = Process Connection	Any triple letter and/or number combination ;except for connections made of synthetic material
190 = Seal	A, B, G, F, J, K, Y
500 = Operating Language	AA, AB, AC, AD, AE, AF, AK, AL
550 = Calibration	F1, F2
570 = Service	HA, HB, HC, IA, IB, I9
580 = Test, Certificate	JA, JB, KD, KE, K9
600 = Separate housing	MA, MB, MC, MH
610 = Accessory mounted	NA
620 = Accessory enclosed	PA, P2, P4, QJ, QK, QL, RL, RM, RN
850 = Software Version	78
895 = Identification	Z1, Z2

2) Cerabar M PMP51

Product Description and/or Approval Condition

Date of Issue : 26 May 2022

010 = Approval	AA, BA, BB, BC, BD, BE, BG, B1, B2, IA, IB, ID, IE, I1, CA, CB, CC, CD, C1, FA, FB, FD, F1, 99
020 = Output	1/2 (4-20mA Analog/HART), 9
030 = Display, Operation	1, 2, 9
040 = Housing	I, J, Q, R, S, Y
050 = Electrical Connections	A, B, C, D, I, M, P, S, V, Y
070 = Sensor range	1F, 1H, 1K, 1M, 1P, 1S, 1U, 1W, 2F, 2H, 2K, 2M, 2P, 2S, 2U, 2W, 99
080 = Reference accuracy	D, G, Y
090 = Calibration	A, B, C, D, E, F, J, K, Y
110 = Process Connection	Any triple letter and/or number combination ;except for connections made of synthetic materials
170 = Material of the process isolating diaphragm	A, B, M, Y
180 = Fill fluid	1, 2, 9
500 = Operating Language	AA, AB, AC, AD, AE, AF, AK, AL
550 = Calibration	F1, F2
570 = Service	HA, HB, HC, IA, IB, I9
580 = Test, Certificate	JA, JB, JF, KB, KD, KE, KG, K9
600 = Separate housing	MA, MB, MC, MH
610 = Accessory mounted	NA
620 = Accessory enclosed	PA, P2, P4, QA, QB, QC, QG, QJ, QK, QL, RL, RM, RN
850 = Software Version	78
895 = Identification	Z1, Z2
3) Cerabar M PMP55	
010 = Approval	AA, BA, BB, BC, BD, BE, BG, B1, B2, 8A, 8B, IA, IB, ID, IE, I1, CA, CB, CC, CD, C1, FA, FB, FC, FD, F1, 99
020 = Output	1/2 (4-20mA Analog/HART), 9
030 = Display, Operation	1, 2, 9
040 = Housing	I, J, Q, R, S, Y
050 = Electrical Connections	A, B, C, D, I, M, P, S, V, Y
070 = Sensor range	1F, 1H, 1K, 1M, 1P, 1S, 1U, 1W, 2F, 2H, 2K, 2M, 2P, 2S, 2U, 2W, 99
080 = Reference accuracy	D, G, Y
090 = Calibration	A, B, C, D, E, F, J, K, Y
110 = Process Connection	Any triple letter and/or number combination ;except for connections made of synthetic materials
170 = Material of the process isolating diaphragm	A, B, C, D, M, R, S, Y
180 = Fill fluid	1, 2, 4, 5, 6, 9
200 = Diaphragm seal connection	A, B, D, E, Y
500 = Operating Language	AA, AB, AC, AD, AE, AF, AK, AL
550 = Calibration	F1, F2
570 = Service	HA, HB, HC, HG, HK, IA, IB, I9
580 = Test, Certificate	JA, JB, JF, KB, KD, KE, KF, KG, K9
590 = Other approvals	LW
600 = Separate housing	MA, MB, MC, MH
610 = Accessory mounted	NA
620 = Accessory enclosed	PA, P2, P4, QA, QB, QC, QJ, QK, QL, QP, QR, QS, RL, RM, RN
850 = Software Version	78
895 = Identification	Z1, Z2

3. Documentation :

- 1) Drawings : 960006362-B, 960008718—, 960008721—, 960008726—, 960008736—, 960008737—
210026284-F, 210026349-G
 - 2) Test Reports : U100729E2, U100729E3, U100729E6, U100729E7, U113828 E1 2nd ver.
970002747—, 970002748—, E100729E2, E100729E3
970000867—, 970000868—, 970000870—, 970000878—, 970000879—, 970000881—,
970000883—, 970000884—, 970000886—, 970001052—, 970001074—, 970001079—,
970008310_AK, 970008312_AK, 970008311_AK
 - 3) Technical Information : TI00436P/00/EN/30.21
 - 4) Software : MI01232PEN_0113
- ### 4. Approval Condition

Product Description and/or Approval Condition

Date of Issue : 26 May 2022

- 1) This approval is granted on the basis of the approved documentation and the test reports (IACS UR E10 Rev.7).
- 2) The product or packing is to be marked with the manufacturer's name and type designation on a suitable position.
- 3) Individual Product Certification is not required.
- 4) Explosion-proof certification by a notified/recognized Certification Body is not covered by this certificate. Ratings and Special Condition for Safe Use in hazardous areas are to be obtained from the relevant valid Ex-Certificate.
- 5) Degree of protection shall be complied with Rule Pt.6 Ch.1 Sec.2 201.2. (5).

< End of Certificate >

