

Type Approval Certificate



[Flow Meter]

Initial Approval 27th September, 2021
Manufacturer Endress+Hauser Flowtec AG
 Kaegenstrasse 7, CH-4153 Reinach BL1, Switzerland
Product Description Type : Promass O 100

" 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 of Steel Ships.

This Certificate is valid until 26th September, 2026

Issued at Busan, Korea on 27th September, 2021



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(ME21023276743) and certificate No.(MIL24580-AE011).



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 : 27th September, 2021

A. Product Description

1. Product Specification

Coriolis flow meter for mass or volume flow measurement of fluids or gases

- 1) Comprising of sensor Promass 0 and transmitter Promass 100
- 2) Power supply : 24V DC
- 3) Flange range : DN 80 to 250
- 4) Output signal : 4-20mA HART, PROFIBUS DP, EtherNet/IP, Modbus RS485, PROFINET, Pulse/Frequency/Switch
- 5) Degree of protection : IP 66/67
- 6) Ex-proof protection : according to relevant Ex-Certificate(s)
- 7) Firmware version
 - 01.01.zz : HART
 - 01.01.zz : Profibus DP
 - 01.03.zz : Modbus
 - 01.02.zz : Ethernet/IP
 - 01.00.zz : Profinet
- 8) Model designation
[Promass 0 100]
Order code : 801B aa - bb c d e f g hh iii j
 aa - Nominal diameter : 80, 1H, 1F, 2F
 bb - Approvals : Any two letter and/or number combination
 c - Power supply : D
 d - Output; Input : B, L, M, N, R
 e - Display; Operation : A, B
 f - Housing : A, B, C
 g - Electrical connection : A, B, C, D, I, L, N, P, Q, U
 hh - Meas. Tube Mat., Wetted parts surface : FA
 iii - Process connection : Any triple letter and/or number combination
 j - Calibration flow : A, B, C, D, K, L, M, 9

2. Approved Drawings and Documents

- 1) Technical information No. TI01034D/06/EN/07.18
- 2) Drawing No. FEK3149-0000ZDD Ver.00, FEK2787-0000ZAA Ver.00, 322747-0000ZEE Ver.00, 323351-0000ZAC Ver.00
- 3) Test plan No. EMC2021PCF0014 Ver.01.20

3. Test Reports, etc.

- 1) Test Reports
 - paconsult No. 14-5875 Rev.0 (2014.08.19), 18-10301C Rev.3 (2018-11-05)
 - MTN No. 07295.183.14 V1.1 (2014-09-02), 071997.140.18 V1.3 (2018-08-10)
 - Sira No. 51G24572labA (2011-10-18)
 - E+H No. EMC2021PCF0019 Ver.01.00 (2021-09-08), EMC2020PCF0015 Ver.01.00 (2020-10-01), Promass 100 Modbus (2014-06-27), Promass 100 Profibus DP (2018-09-06), Promass Profinet (2015-07-09), Promass 500 EthernetIP (2017-09-05)
- 2) E+H's overview: official software status (2018.09.18)
- 3) Assembly plans, Circuit diagrams
- 4) Order code for Promass 0 100
- 5) Ex-proof Cert. No. IECEx DEK 12.0041 Issue No.3 (2015-05-01)

B. Approval Condition

1. Application & Limitation

- 1) This approval is granted on the basis of the test reports and the approved documentation.
- 2) The manufacturer should inform this Society of all kinds of revisions of the equipment. If the changes are recognized to affect functionality of the approved equipment, type test to confirm the reliability of the revised equipment may be performed in the presence of our surveyor.
- 3) Degree of protection shall be complied with Rule Pt.6 Ch.1 Sec.2 201.2. (5).
- 4) The product shall not be installed in the bridge or on open decks.
- 5) 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.

2. Individual Product Cert. and Drawing Approval Requirement

- 1) Individual product certification is not required.

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3. Marking

- 1) The product or packing is to be marked with the manufacturer's name and type designation on a suitable position.

4. Others

- 1) Test condition (IACS UR E10 Rev.8 basis)

Test	Condition	Remark
EMC	All locations excluding the bridge and deck zone	-
Temperature	-25°C ~ +70°C	-
Vibration	Acceleration $\pm 0.7g$	-
Ingress protection	IP66/67	-

< End of Certificate >

