



Marine & Offshore

Certificate number: 28505/B0 BV

File number: AP4363

Product code: 3764I

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

ENDRESS + HAUSER FLOWTEC AG

Reinach BL 1 - SWITZERLAND

for the type of product

FLOW MONITORING/ALARM DEVICES

Coriolis Mass Flow Measuring System

Proline Promass of type: 83X, 84X

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships

EC Code: 41S

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 27 Nov 2022**For Bureau Veritas Marine & Offshore,**

At BV HAMBURG, on 27 Nov 2017,

Dirk Hoepfner



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

Proline Promass 83X, 84X series are flowmeters for liquids and gases which operate on the Coriolis measurement principle. The measuring system consists of a transmitter (Promass 83, 84) and a sensor (X)

1.1 - Main characteristics:

Transmitter:

Power Supply: 24VAC/DC or 230V AC 50/60Hz
 Output: 4 to 20mA, HART for configuration
 Operation: 83/84: four line display, touch control
 Housing: Aluminium or stainless steel
 Degree of protection: IP67
 Software version: 3.01.xx

Sensor:

Process connection: Flange, DN 300, DN 350, DN 400
 Sensor material: Stainless Steel

1.2 - Variants:

Type: **Promass 83X3F a bbc d e f g h i j k**
 (acc. to document: 83X3F_Ordercode_EN)

a= Measuring Tube material:

A, P

bb= Process connection:

AA, AB, AC, DA, DB, DC, D1, D2, D3, D4

c= Flange diameter:

S, 4, 6

d= Additional test, certificate:

A, B, E, F, G, N, S, T, 5, 6

e= Calibration:

A, B, C, D, G, H, M, N

f= Approval:

Non Ex- or Ex-approvals

g= Housing:

A, C, D, E, F, L, M, N, 1, 3, 4, 6, 7, 8

h= Cable Entry:

A, B, C, F, K, L, M, Q, R, S, X

i= Power Supply, Display:

A, B, C, D, E, F, G, H, X, 7, 8

j= Adjustment, Software Feature:

A, B, C, D, E, R, X

k= Output; Input:

A, B, C, D, E, L, M, R, S, T, U, W, X, 0 to 6

Type: **Promass 84X3F a bbc d e f g h i j k**
 (acc. to document: 84X3F_Ordercode_EN)

a= Measuring Tube material:

A, P

bb= Process connection:

AA, AB, AC, DA, DB, DC, D1, D2, D3, D4

c= Flange diameter:

S, 4, 6

d= Additional test, certificate:

A, B, E, F, G, N, S, T, 5, 6

e= Calibration:

A, B, C, D, G, H, L, M, N

f= Approval:

Non Ex- or Ex-approvals

g= Housing:

A, C, D, E, F, L, M, N, 1, 3, 4, 6, 7, 8

h= Cable Entry:

A, B, C, F, X

i= Power Supply, Display:

A, B, C, D, E, F, G, H, X, 7, 8

j= Custody Transfer Approval:

A, C, E, G, K, L, M, O, P, U, X

k= Output; Input:

D, M, S, T, X, 1, 2

2. DOCUMENTS AND DRAWINGS:

- Technical Information TI00110D/06/EN/01.11 dated 01.11, TI00111D/06/EN/01.11 dated 01.11
- Manufacturer Information MIDD102302en0, dated 14.01.2010
- Circuit diagrams and assembly drawings for pcb's

B0 version:

- Technical Information TI00110D/06/EN/03.14 dated 03.14, TI00111D/06/EN/02.14 dated 02.14
- Manufacturer Information MI01177D/06/en/01.10, dated 01.01.2010, MI01178D/06/en/01.10, dated 01.01.2010

3. TEST REPORTS:

Phoenix Testlab: E102258E3 dated: 08 Sept. 2010; S102258E4 dated: 15 Sept. 2010

Paconsult: 118-03 dated: 14 Feb. 2003 paconsult; 03-118 dated 14 February 2003; 07-1567-rev. 1 dated: 28 Sept. 2007

Endress + Hauser: COR009 dated: 01.10.06; FES_E_07_022_GL_1/970000029 dated: 17.12.2007;

- PTC_E_03_039 dated: 10.10.03; 83F_A60F6E02000_ext dated 15 July 2008

DEKRA: DMT 00 ATEX E 074 X Ed.3 dated 26 August 2011; IECEx BVS 06.0019x issue 3 dated 2011-09-05.

4. APPLICATION / LIMITATION:

- 4.1 - Bureau Veritas Rules for the Classification of Steel Ships.
- 4.2 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**
- 4.3 - The equipment fulfils the EMC requirements for installation in General Power Distribution Zone and Deck Zone.
- 4.4 - Bureau Veritas Environmental Category, **EC Code: 41S.**
- 4.5 - The installation shall comply with the Manufacturer's recommendation described in the above-referenced documentation.
- 4.6 - Only Hardware and Software successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer are covered by this certificate.

5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 - The above mentioned products are to be supplied by **ENDRESS + HAUSER Flowtec AG - SWITZERLAND** in compliance with the type and the requirements described in this certificate.
- 5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.
- 5.3 - BV product certificate is required.
- 5.4 - Equipment is to be supplied with manual(s) for installation, use and maintenance.
- 5.5 - Each sensor body is to be hydraulic pressure tested to 1.5 times the maximum design pressure.

6. MARKING OF PRODUCT:

- Manufacturer name or trademark.
- Date of manufacture and/or serial number.
- Equipment type number or model identification.
- Ex marking, as relevant.
-  or  conformity marking, if relevant.

7. OTHERS:

- 7.1 - It is the responsibility of **ENDRESS + HAUSER Flowtec AG - SWITZERLAND** to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.
- 7.2 - This certificate supersedes the Type Approval Certificate N° 28505/A0 BV issued on 08 Nov 2012 by the Society.

*** END OF CERTIFICATE ***