

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Ultrasonic Flow Measuring System

with type designation(s)

Proline Prosonic Flow 93P / 93W

Issued to

Endress + Hauser Flowtec AG
Reinach BL, BL, Switzerland

is found to comply with

DNV GL 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 GL.

Temperature	B
Humidity	B
Vibration	A
EMC	B
Enclosure	C

Issued at **Hamburg** on **2018-07-16**

for **DNV GL**

This Certificate is valid until **2023-07-15**.

DNV GL local station: **Augsburg**

Approval Engineer: **Marco Rinkel**

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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.



Product description

Ultrasonic Flow Measuring System

Approved variants:

Order codes: Prosonic Flow aa b cc-d e f g h i j k l m n o

aa	Type of electronics	93	93
b	Type of sensor	P	W
cc	Mounting type	A1, A2	A1, A2
d	Flow sensor	A, B, E, F	A, B, M, N
e	Sensor holder	B, 9*	A, B, 9*
f	Installation set	0, 1, 2, 3, 4	0, 1, 2, 3, 4
g	Sensor cable	A - H	A - H
h	Cable entry sensor	0, 1, 2, 3	0, 1, 2, 3
I	Additional test, certificate	0, 1, S, T, 9*	0, 1, S, T, 9*
J	Approval	A, B, D, H, K, N, R, S, U	A, R
k	Housing	C, G, X	C, X
l	Cable entry	A, B, C, F, X	A, B, C, X
m	Power supply; Display	7, A, C, E, G, X	7, A, C, E, G, X
n	Adjustment / Software	A, B, E, F, X, 9*	A, B, E, F, X, 9*
o	Output / Input	A - D, L, M, S, T, W, 2, 4, 6, X	A - D, L, M, W, 2, 4, 6, X

*) Meaning of key '9':

- e material 316L
- i any manufacturer's and/or material certificate
- n customized pre-setup

Power supply: 230V AC nominal
Output: 0/4-20mA HART, +(1or 2x frequency), +(1or 2x relay)
Electronic head: Wall-mounted or field housing
Software version: V. 02.02.yy, 02.03.yy

Manufactured by

Endress+Hauser Flowtec AG
Kaegenstrasse 7
4153 Reinach BL
Switzerland

Endress+Hauser Flowtec AG
Division Cernay
35, rue de l'Europe
68700 Cernay
France

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, 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 GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Job Id: **262.1-028805-1**
Certificate No: **TAA00001XX**

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Connections to piping systems shall be in accordance with relevant rules, ref. DNV GL rules for classification of ships Pt.4 Ch.6 Sec.9 Pipes, pumps, valves, flexible hoses and detachable pipe connections etc.

Note 1: Halogen-free properties of the cable have not been tested

Note 2: Measures for limitation of the propagation of fire along cable bundles are required (fire stops)

The installation should be performed according to relevant E+H Technical Information document to avoid excessive vibration. I.e. Piping and sensor are to be secured if vibration is severe, and for the most severe vibrations it is recommended that the sensor and electronic head are mounted separately (wall mounted electronic head).

Type Approval documentation

See ANNEX

Tests carried out

Applicable tests according to Class Guideline DNVGL-CG-0339, November 2016

Marking of product

Endress+Hauser Flowtec AG

Order code as listed under Product description

Unique serial no.

Periodical assessment

The scope of the retention/renewal survey 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 survey 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

Retention survey is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE

Job Id: **262.1-028805-1**
Certificate No: **TAA00001XX**

ANNEX
Type Approval documentation
(hidden)

Test reports:
E+H FES_E_07_004_GL
paconsult 06-1365E

Technical Information:
TI056D/06/en 50099327
TI057D/06/en/04.06

MI01185D/06/en/01.11
TI00083D/06/EN/13.11
TI00084D/06/EN/13.11

Assembly drawings
Circuit diagrams