DNV·GL

Certificate No:
TAA00001N6

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Pressure Transmitter

with type designation(s)
Deltapilot S FMB 70

Issued to
Endress + Hauser SE + Co. KG
Maulburg, Germany

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.

Location classes:

Temperature	**D**
Humidity	**B**
Vibration	**B**
EMC	**B**
Enclosure	**B**

Issued at **Hamburg** on **2018-02-12**
This Certificate is valid until **2023-02-11**.
DNV GL local station: **Augsburg**

Approval Engineer: **Dariusz Lesniewski**

for **DNV GL**

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.

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Job Id: **262.1-003822-5**
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Product description

Pressurer transmitter for hydrostatic pressure measurement (level measurement) in liquids
Sensor: Metallic diaphragm
Pressure range [bar]: from -100 to 100mbar to - 0.9 to +10bar
Output signal: 4…20mA HART, 2-wire,
PROFIBUS PA or
FOUNDATION Fieldbus FF
Power supply: 10.5…45V DC (not Ex), 4…20mA loop-powered
Housing: Aluminium or AISI 316L
Electrical connection: Cable entry (gland or thread), connector
Process connection: Flange, thread
Software version: V2.20.xx (HART), 4.01.xx (Profibus PA), 4.00.xx (Fieldbus FF)

Product structure related to approval drawing 960015532		10 20 30 40 50 60 70 90 100 110
10 =	Approval	Any single letter and/or number
20 =	Output, Operation	A, B, C, D, E, F, M, N, O, P, Q, R
30 =	Housing; Cover sealing; Cable entry	A, B, C, D, E, F, J, K, L, M, N, P, R, S, T, U, V
40 =	Sensor range, Sensor overload limit	Any double letter and/or number combination
50 =	Calibration; Unit	Any single letter and/or number
60 =	Membrane material; Seal	2, 6
70 =	Process connection	Any double letter and/or number combination; except for thread < 1/2"
90 =	Fill fluid	C, F, L
100 =	Additional option 1	A, B, C, E, F, J, L, M, N, S, 3, 4, 5, 6, 7, 8, 9**
110 =	Additional option 2	A, C, E, F, G, J, L, M, N, S, U, 3, 4, 5, 6, 7, 8, 9**

9** = Multiple combinations between 100 and 110; customer specific documentation

Approval conditions

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.

Application/Limitation

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

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

Marking of product

The products to be marked with:
- manufacturer name
- model name
- serial number
- 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 at least every second year and at renewal of this certificate.

END OF CERTIFICATE