DNV·GL

Certificate No:
**TAA0000263**

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**That the Flow Transmitter**

with type designation(s)
**Promag W, P 300/500**

Issued to
**Endress + Hauser Flowtec AG**
**Reinach 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.**

**Location classes:**

| | |
|---|---|
| **Temperature** | **D** |
| **Humidity** | **B** |
| **Vibration** | **A** |
| **EMC** | **B** |
| **Enclosure** | **C** |

Issued at **Hamburg** on **2019-04-01**
This Certificate is valid until **2024-03-31**.
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.



© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Job Id: **262.1-028691-1**
Certificate No: **TAA0000263**

## Product description

Electromagnetic flowmeter for bidirectional measurement of liquids
The device consists of sensor Promag W, P and transmitter Promag 300/500
Process connection: flange
Flange dimensions: DN 25 to 2400 (W), DN 15 to 600 (P)
Power supply: 24V DC, 100-230V AC, 100-230V AC/24V DC
Output signal: 4-20mA HART, 4-20mA WirelessHART, Pulse/Frequency/Switch
Modbus, Ethernet/IP, Profibus PA, Profibus DP, Profinet, Foundation Fieldbus
Degree of protection: IP 66/67
Ex-proof protection: according to relevant Ex-Certificate(s)

Firmware version:

01.01.zz, HART
01.01.zz, Profibus PA
01.00.zz, Profibus DP
01.01.zz, Modbus
01.00.zz, Ethernet/IP
01.00.zz, Profinet
01.00.zz, Foundation Fieldbus

Variants according to order code:

| **Promag W 300** | | |
|---|---|---|
| Order Code | **5W3B** aa – bb c d ee f g h i j k lll m n | |
| aa | Nominal Diameter: | 25; 32; 40; 50; 65; 80; 1H; 1Z; 1F; 2H;2F; 3H; 3F; 3S; 4H; 4F; 5H; 6H; 7H; 7F; 8H; 9H; T0; V0; T2; V3; T4; V5; T6; V6; T8; V9; E0; E1; E2; E3; E4 |
| bb | Approval; Transmitter + Sensor: | Any two letter and/or number combination |
| c | Design: | C; D; E; F; G |
| d | Power Supply: | D; E; I |
| ee | Output; Input 1: | BA; BB; CA; CB; CC; GA; HA; LA; MA; NA; RA; SA; TA |
| f | Output; Input 2: | A; B; C; D; E; F; G; H; I; J; K; L |
| g | Output; Input 3: | A; B; C; D; E; F; G; H; I; J |
| h | Display; Operation: | A; F; G; M; O |
| i | Housing: | A |
| j | Electrical Connection: | A; B; C; D; L; M; N; P; R; S; T; U; V; 3; 4; 5 |
| k | Liner: | H; U; Q |
| lll | Process Connection: | Any triple letter and/or number combination |
| m | Electrodes: | G; H; 0; 1; 2 |
| n | Calibration Flow: | A; B; D; E; F; G; M; N; 8; 9 |

| **Promag W 500** | | |
|---|---|---|
| Order Code | **5W5B** aa – bb c d ee f g h i j k l m n o ppp q r | |
| aa | Nominal Diameter: | 25; 32; 40; 50; 65; 80; 1H; 1Z; 1F; 2H;2F; 3H; 3F; 3S; 4H; 4F; 5H; 6H; 7H; 7F; 8H; 9H; T0; V0; T2; V3; T4; V5; T6; V6; T8; V9; E0; E1; E2; E3; E4 |
| bb | Approval; Transmitter + Sensor: | Any two letter and/or number combinationNS; N7; N8 |
| c | Design: | C; D; E; F; G |

| | | |
|---|---|---|
| d | Power Supply: | D; E; I; X |
| ee | Output; Input 1: | BA; BB; CA; CB; CC; GA; HA; LA; MA; NA; RA; SA; TA ; XX |
| f | Output; Input 2: | A; B; C; D; E; F; G; H; I; J; K; L; X |
| g | Output; Input 3: | A; B; C; D; E; F; G; H; I; J; X |
| h | Output; Input 4: | A; B; C; D; E; F; G; H; I; J; X |
| i | Display; Operation: | F; G; X |
| j | Integrated ISEM Electronic: | A; B |
| k | Housing: | A; L; X |
| l | Sensor Housing: | A |
| m | Cable, Sensor Connection: | A; B; E; F; 1; 2; 3; 4; 5; 6; 7 |
| n | Electrical Connection: | A; B; C; D; L; M; N; P; R; S; T; U; V; 3; 4; 5 |
| o | Liner: | H; U; Q |
| ppp | Process Connection: | Any triple letter and/or number combination |
| q | Electrodes: | G; H; 0; 1; 2 |
| r | Calibration Flow: | A; B; D; E; F; G; M; N; 8; 9 |

| **Promag P 300** | | |
|---|---|---|
| Order Code | **5P3B** aa – bb c dd e f g h i j kkk l m | |
| aa | Nominal Diameter: | 15; 25; 32; 40; 50; 65; 80; 1H; 1Z; 1F; 2H; 2F; 3H; 3F; 4H; 4F; 5H; 6H |
| bb | Approval; Transmitter + Sensor: | Any two letter and/or number combination |
| c | Power Supply: | D; E; I |
| dd | Output; Input 1: | BA; BB; CA; CB; GA; HA; LA; MA; NA; RA; SA; TA |
| e | Output; Input 2: | A; B; C; D; E; F; G; H; I; J |
| f | Output; Input 3: | A; B; C; D; E; F; G; H; I; J |
| g | Display; Operation: | A; F; G; M; O |
| h | Housing: | A |
| i | Electrical Connection: | A; B; C; D; L; M; N; P; R; S; T; U; V; 3; 4; 5 |
| j | Liner: | A; B; E |
| kkk | Process Connection: | Any triple letter and/or number combination |
| l | Electrodes: | G; H; 0; 1; 2; 3; 4; 5; 8 |
| m | Calibration Flow: | A; B; D; E; M; N; 9 |

| **Promag P 500** | | |
|---|---|---|
| Order Code | **5P5B** aa – bb c dd e f g h i j k l m n ooo p q | |
| aa | Nominal Diameter: | 15; 25; 32; 40; 50; 65; 80; 1H; 1Z; 1F; 2H; 2F; 3H; 3F; 4H; 4F; 5H; 6H |
| bb | Approval; Transmitter; Sensor: | Any two letter and/or number combination |
| c | Power Supply: | D; E; I; X |
| dd | Output; Input 1: | BA; BB; CA; CB; GA; HA; LA; MA; NA; RA; SA; TA ;XX |

| | | |
|---|---|---|
| e | Output; Input 2: | A; B; C; D; E; F; G; H; I; J; X |
| f | Output; Input 3: | A; B; C; D; E; F; G; H; I; J; X |
| g | Output; Input 4: | A; B; C; D; E; G; H; I; J; X |
| h | Display; Operation: | F; G; X |
| i | Integrated ISEM Electronic: | A; B |
| j | Transmitter Housing: | A; L; X |
| k | Sensor Junction Housing: | A; L |
| l | Cable, Sensor Connection: | A; B; E; F; 1; 2; 3; 4; 5; 6 ;7 |
| m | Electrical Connection: | A; B; C; D; L; M; N; P; R; S; T; U; V; 3; 4; 5 |
| n | Liner: | A; B; E; 9 |
| ooo | Process Connection: | Any triple letter and/or number combination |
| p | Electrodes: | G; H; 0; 1; 2; 3; 4; 5; 8 |
| q | Calibration Flow: | A; B; D; E; M; N; 9 |

## 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
This type approval does not cover wetted parts. Suitability of pressure contained wetted parts to be considered for each application according to relevant requirements.

## 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 after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE