DNV·GL

TYPE APPROVAL CERTIFICATE

Certificate No:
TAA000019B
Revision No:
1

This is to certify:

That the Flow Transmitter

with type designation(s)
ProcessMaster Series FEP300 and FEP500

Issued to
ABB Engineering (Shanghai) Ltd.
Shanghai, China

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	**A**
Enclosure	**C/D**

Issued at **Hamburg** on **2017-09-19**

This Certificate is valid until **2022-07-19**.
DNV GL local station: **Shanghai**

Approval Engineer: **Dariusz Lesniewski**

Digitally Signed By: Rinkel, Marco
for **DNV GL**
Signing Date: 2017-09-20
Location: Hamburg - On behalf of

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: **262.1-026954-1**
Certificate No: **TAA000019B**
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Product description

ProcessMaster electromagnetic flowmeter series FEP300 and series FEP500, comprising the following models:

Model no.	
FEP311	Compact design without explosion protection
FEP315	Compact design with explosion protection
FEP321	Remote design – Flowmeter sensor without explosion protection
FEP325	Remote design – Flowmeter sensor with explosion protection
FET321	Remote design – Transmitter without explosion protection
FET325	Remote design – Transmitter with explosion protection
FEP511	Compact design without explosion protection
FEP515	Compact design with explosion protection
FEP521	Remote design – Flowmeter sensor without explosion protection
FEP525	Remote design – Flowmeter sensor with explosion protection
FET521	Remote design – Transmitter without explosion protection
FET525	Remote design – Transmitter with explosion protection

Technical data

FEP300 measured value error:	Standard 0.4% of rate, optional 0.2% of rate
FEP500 measured value error:	Standard 0.3% of rate, optional 0.2% of rate
Transmitter housing and sensor material:	Aluminium (Al) or stainless steel (SST)
Power supply specification:	100…230VAC 50/60Hz, 24VAC 50/60Hz or 24VDC

External communication protocols: Profibus PA, Foundation Fieldbus or HART 4-20 mA.
For further details, see respective data sheets as listed under Type Approval documentation.

Place(s) of manufacture

ABB Engineering (Shanghai) Co., Ltd.
Shanghai, China

ABB Automation Products GmbH
Göttingen, Germany

ABB Limited
Salterbeck Trading Estate
Workington, Cumbria CA14 5DS, UK

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 Ships Pt.4 Ch.9 Control and Monitoring Systems.

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.

Ex-loops are to be documented according to the requirements in Pt.4 Ch.8 Sec.11.

Type Approval documentation

Drawings

Al housing:	D323D628B01, D379D171B02, D379D172B02
SST housing:	3KQZ407019U0001, 3KQZ407021U0101, 3KQZ407023U0101

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Technical documentation
Data sheet FEP300 – DS/FEP300-EN Rev. J
Data sheet FEP500 – DS/FEP500-EN Rev. C
Operating instructions FEX300, FEX500 – OI/FEX300/FEX500-EN Rev. F
Change notice for ProcessMaster FEP and FET – RAR_DNV_0033 dated 2013-12-05

Test reports
ProcessMaster DNV Test Outline dated Sep 2012
TÜV Nord test report no.08 799 353785-001 dated 2008-01-09 (IP enclosure FEP311/FEP321)
TÜV Nord test report no.08 799 353785-002 dated 2008-01-09 (IP enclosure FEP311/FEP321)
SITIIAS test report no. A12-067-WT-01 dated 2012-12-10 (EMC/Env. FEP311 230VAC/60Hz)
SITIIAS test report no. A12-067-WT-02 dated 2012-12-10 (EMC/Env. FEP325/FET325 24VDC)
SITIIAS test report no. A12-067-WT-03 dated 2012-12-10 (EMC/Env. FEP321/FET321 100VAC/50Hz)
SITIIAS test report no. A12-067-WT-04 dated 2012-12-10 (EMC/Env. FEP321/FET321 24VAC/50Hz)

Type approval periodical assessment report issued at Shanghai on 2017-05-31

Type approval periodical assessment report issued at Magdeburg on 2017-08-23

Type approval periodical assessment report issued at Workington on 2017-09-06

Tests carried out
Applicable tests according to class guideline DNVGL-CG-0339, November 2016.
Hydrostatic pressure test at 150% of design pressure.

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