Certificate No:
TAA00003A4

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Level Transmitter

with type designation(s)
Micropilot FMR60B, FMR62B, FMR66B, FMR67B

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

is found to comply with
DNV 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.

Location classes:

Temperature	**D**
Humidity	**B**
Vibration	**A**
EMC	**B**
Enclosure	**B, C***

***C plastic housing and 316L L shape only**

Issued at **Hamburg** on **2023-08-09**
This Certificate is valid until **2028-08-08**.
DNV local unit: **Augsburg**

Approval Engineer: **Dariusz Lesniewski**

for **DNV**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description

Micropilot FMR60B

Ex-Approval	Ratings for application in hazardous areas are to be obtained from the applicable Ex Certificates
Output	*2-wire 4-20mA HART
Firmware	01.00.zz, HART 7, DevRev01
Display	without Segment display w/o buttons (with or without *Bluetooth) Graphic display touch control (with or without *Bluetooth) Prepared for Display FHX50B
Housing	Single compartment; plastic Single compartment; Alu, coated Note: Not for use on open deck Dual compartment; Alu, coated Note: Not for use on open deck Dual compartment L-shape; Alu, coated Note: Not for use on open deck
Electrical connection	Cable Gland Thread Plug (M12 or HAN7D)
Application	Process temperature -20…200°C/-4...392°F Process temperature -40…200°C/-40...392°F
Antenna	Drip-off, PTFE 50mm/2" Integrated, PEEK, 20mm/3/4" Integrated, PEEK, 40mm/1-1/2"
Process connection	Thread ≥ 3/4''
Seal	As per process requirement
Optional Items	
Application Package	Heartbeat Verification + Monitoring
Mounted accessories	Gas-tight feed through Cover transparent, glass panel Blind plug marking according to IEC/ATEX Ex d

Micropilot FMR62B

Ex-Approval	Ratings for application in hazardous areas are to be obtained from the applicable Ex Certificates
Output	*2-wire 4-20mA HART
Firmware	01.00.zz, HART 7, DevRev01
Display	without Segment display w/o buttons (with or without *Bluetooth) Graphic display touch control (with or without *Bluetooth) Prepared for Display FHX50B
Housing	Single compartment; plastic Single compartment; Alu, coated Note: Not for use on open deck Dual compartment; Alu, coated Note: Not for use on open deck Dual compartment L-shape; Alu, coated Note: Not for use on open deck Dual compartment L-shape; 316L Note: max. process temp range -40…150°C (-40…320°F)
Electrical connection	Cable Gland Thread Plug (M12 or HAN7D)
Application	Process temperature -20…200°C/-4...392°F Process temperature -40…450°C/-40...392°F

	Process temperature -60…150°C/-76...302°F Process temperature -196…200°C/-320...392°F Process temperature -20…200°C/-4...392°F, steam applications
Antenna	Drip-off, PTFE 50mm/2" Cladded flush mount, PTFE, 50mm/2" Cladded flush mount, PTFE, 80mm/3" Horn, 316L, 65mm/2.6"
Process connection	Flange ⩾ DN50 (2”)
Seal	As per process requirement
Optional Items	
Application Package	Heartbeat Verification + Monitoring
Mounted accessories	Gas-tight feed through Cover transparent, glass panel Blind plug marking according to IEC/ATEX Ex d

Micropilot FMR66B

Ex-Approval	Ratings for application in hazardous areas are to be obtained from the applicable Ex Certificates
Output	*2-wire 4-20mA HART
Firmware	01.00.zz, HART 7, DevRev01
Display	without Segment display w/o buttons (with or without *Bluetooth) Graphic display touch control (with or without *Bluetooth) Prepared for Display FHX50B
Housing	Single compartment; plastic Single compartment; Alu, coated Note: Not for use on open deck Dual compartment; Alu, coated Note: Not for use on open deck Dual compartment L-shape; Alu, coated Note: Not for use on open deck
Electrical connection	Cable Gland Thread Plug (M12 or HAN7D)
Application	Process temperature -40…130°C/-40...266°F
Antenna	Drip-off, PTFE 50mm/2"
Process connection	Thread ≥ 3/4''
Seal	As per process requirement
Optional Items	
Application Package	Heartbeat Verification + Monitoring
Mounted accessories	Gas-tight feed through Cover transparent, glass pane Blind plug marking according to IEC/ATEX Ex d

Micropilot FMR67B

Ex-Approval	Ratings for application in hazardous areas are to be obtained from the applicable Ex Certificates
Output	*2-wire 4-20mA HART
Firmware	01.00.zz, HART 7, DevRev01
Display	without Segment display w/o buttons (with or without *Bluetooth) Graphic display touch control (with or without *Bluetooth) Prepared for Display FHX50B

Housing	Single compartment; plastic Single compartment; Alu, coated Note: Not for use on open deck Dual compartment; Alu, coated Note: Not for use on open deck Dual compartment L-shape; Alu, coated Note: Not for use on open deck Dual compartment L-shape; 316L Note: max. process temp range -40…150°C (-40…320°F)
Electrical connection	Cable Gland Thread Plug (M12 or HAN7D)
Application	Process temperature -40…450°C/-40...392°F
Antenna	Drip-off, PTFE 50mm/2" Flush mount, PTFE, 80mm/3" Horn, 316L, 65mm/2.6"
Process connection	Flange ⩾ DN50 (2”)
Seal	As per process requirement
Optional Items	
Application Package	Heartbeat Verification + Monitoring
Mounted accessories	Gas-tight feed through Cover transparent, glass panel Blind plug marking according to IEC/ATEX Ex d

*Power supply: 24VDC, 2-wire, loop-powered (to be supplied only via type approved power supply, (e. g. E+H RN22/RN42)

Approval conditions

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

Application/Limitation

*Power supply only via type approved power supply, e. g. E+H RN22/RN42
*Bluetooth for device configuration only
*Location classes:
Enclosure C: plastic housing and 316L L shape only

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.

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