



CERTIFICATE NUMBER
EFFECTIVE DATE
EXPIRY DATE
ABS TECHNICAL OFFICE

24-0015288-PDA
05-Jul-2024
04-Jul-2029
Hamburg Engineering Department

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

ENDRESS & HAUSER SE & CO. KG

located at

HAUPTSTR. 1, , D-79689 MAULBURG, Germany

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

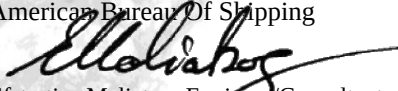
Product: Level Transmitter
Model: Micropilot FMR51, FMR52, FMR54, FMR57
Endorsements:
Tier: 2 - PDA Issued

This Product Design Assessment (PDA) Certificate remains valid until 04/Jul/2029 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping


Efstratios Maliatsos, Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

Revised 08-Jul-2024

ENDRESS & HAUSER SE & CO. KG

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Web: www.endress.com

Tier: 2 - PDA Issued

Product: Level Transmitter
Model: Micropilot FMR51, FMR52, FMR54, FMR57
Endorsements:

Intended Service:

Radar based level detectors used for contactless continuous measurement of liquid and solid media in explosion hazardous areas or non hazardous areas.

Description:

Transmitter with horn antenna or parabolic aerial, flange-mounted.

Rating:

Power supply: 24V DC;

Output: analogue 4...20mA with HART protocol;

Degree of protection: IP 65 (housing), IP 68 (antenna);

Certified: IS/I, II, III/1/A, B, C, D, E, F, G/ T*, I/ 0/ Ex ia IIC T*, I/ 1/ Ex d [ia] IIC/ T*, DIP/ II, III/ 1/ E, F, G (FM Approval 3049342);

Ex ia IIC T6 ... T1 Ga, Ex ia IIC T6 ... T1 Ga/Gb, Ex ic [ia Ga] IIC T6 ... T1 Ga/ Gb/ Gc, Ex na [ia Ga] IIC T6 ... T1 Ga/ Gb/ Gc, Ex na IIC T6 ... T1 Gc, Ex ic IIC T6 ... T1 Gc, Ex d [ia] IIC T6 ... T1 Ga/ Gb, Ex ia IIC Txx°C T500 xx°C Da, Ex ia IIC Txx°C Da/ Db, Ex ta IIC Txx°C T500xx°C Da, Ex ta IIC Txx°C Da/ Db (IECEEx PTB 12.0044X);

II 1G Ex ia IIC T6 Ga, II 1/2G Ex ia IIC T6 Ga/Gb, II 1/2G Ex d fia] IIC T6 Ga/Gb, II 1/2/3 G Ex ic [ia Ga] IIC T6 Ga/Gb/Gc, II 1D Ex ta IIC T5099 xx°C Da, II 1/2 D Ex ta IIC Txx °C Da/Db, II 3G Ex nA IIC T6, II 3 G Ex ic IIC T6, II 1/2/3 G Ex nA [ia Ga] IIC T6 Ga/Gb/Gc, II 1 D Ex ia IIC Ts99 xx°C Da, II 1/2 G Ex ia IIC T6 Ga/Gb, 1/2 D Ex ia IIC Txx°C Da/Db, 1/2 G Ex d [ia] IIC T6 Ga/Gb, 1/2 D Ex ta IIC Txx°C Da/Db, II 1/2 G Ex ia IIC T6, Ga/Gb, 1/2 G Ex d [ia] IIC T6 Ga/Gb (PTB 12 ATEX 2018 X).

Service Restriction:

1. Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
2. Level sensing devices are to be arranged such that they may be removed without emptying tanks and without impairing the integrity of pressurized systems.

Comments:

1. The manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2. Each particular application and installation is to be specifically approved in conjunction with the relevant system, locations and environmental conditions.

Notes/Drawing/Documentation:

Drawing No. TI01040FEN_1020, Technical Information - FMR51 FMR52, Revision: 31-07-2020

Drawing No. TI01041FEN_1020, Technical Information - FMR53 FMR54, Revision: 31-07-2020

Drawing No. TI01042FEN_1020, Technical Information - FMR56 FMR57, Revision: 31-07-2020

Drawing No. KA01100FEN_0622-00, Brief Operating Instructions - FMR51 FMR52 - HART, Revision: 01-08-2022

Drawing No. KA01101FEN_0622-00, Brief Operating Instructions - FMR53 FMR54 - HART, Revision: 01-08-2022

Drawing No. KA01102FEN_0622-00, Brief Operating Instructions - FMR56 FMR56 - HART, Revision: 01-08-2022

Drawing No. KA01125FEN_0322-00, Brief Operating Instructions - FMR51 FMR52 - Foundation Fieldbus, Revision: 01-08-2022

Drawing No. KA01126FEN_0322-00, Brief Operating Instructions - FMR53 FMR54 - Foundation Fieldbus, Revision: 01-08-2022

Revised 08-Jul-2024

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Drawing No. KA01127FEN_0322-00, Brief Operating Instructions - FMR56 FMR56 - Foundation Fieldbus,

Revision: 01-08-2022

Drawing No. KA01129FEN_0422-00, Brief Operating Instructions - FMR51 FMR52 - Profibus PA, Revision: 01-08-2022

Drawing No. KA01130FEN_0422-00, Brief Operating Instructions - FMR53 FMR54 - Profibus PA, Revision: 01-08-2022

Drawing No. KA01131FEN_0422-00, Brief Operating Instructions - FMR56 FMR56 - Profibus PA, Revision: 01-08-2022

Test Reports

Drawing No. 210024713 Drawing GT19 Deckel, 210024713 Drawing GT19 Deckel

Drawing No. 968_EL_882_01_17_de_en_el, SIL test report FMR5x, TUV Rheinland Industrie Service Gmgh, Koeln, 05-12-2017

Drawing No. 970001752, IP Testreport housing GT20

Drawing No. 970001795_test specification_IPxX, IP testreport housing GT18

Drawing No. 970001810_Annex1_Valox357XU, 970001810_Annex1_Valox357XU

Drawing No. 970001810_Annex2_Grilamid-TR_55_D_2010-06-21, 970001810_Annex2_Grilamid-TR_55_D_2010-06-21

Drawing No. 970001813_test specification_IPxX, IP testreport housing GT18

Drawing No. 970001859_sign, IP Testreport housing GT20

Drawing No. 970001860_sign, IP Testreport housing GT20

Drawing No. 970001861_sign, IP Testreport housing GT20

Drawing No. 970001905-a_signES, IP Testreport housing GT19

Drawing No. 970001906-A_signES, IP Testreport housing GT19

Drawing No. 970001907-A_signES, IP Testreport housing GT19

Drawing No. 970001917--sign, IP Testreport housing GT19

Drawing No. 970001949-A_Testspezifikation, IP Testreport housing GT19

Drawing No. 970002008_test specification_IPxX, IP testreport housing GT18

Drawing No. 970005576 EMC test report FMP51 IO210-3_1, EMC Testreport, E+H Testlab, Maulburg, 24-02-2016

Drawing No. 970005576 EMC test report FMP51 IO210-3_2, EMC Testreport, E+H Testlab, Maulburg, 24-02-2016

Drawing No. 970005577 EMC test report FMR50 IO411, EMC Testreport, E+H Testlab, Maulburg, 03-05-2016

Drawing No. 970005578 EMC test report FMP51 IO411, EMC Testreport, E+H Testlab, Maulburg, 03-05-2016

Drawing No. 970005579 EMC test report FMR50 IO410, EMC Testreport, E+H Testlab, Maulburg, 18-05-2016

Drawing No. 970005580 EMC test report FMP51 IO410, EMC Testreport, E+H Testlab, Maulburg, 18-05-2016

Drawing No. E133777E1, EMC Testreport - FMR51, Phoenix Testlab, 12-11-2013

Drawing No. E133777E2, EMC Testreport - FMR54, Phoenix Testlab, 12-11-2013

Drawing No. Enclosure_gt191, Enclosure_gt191

Drawing No. Enclosure_gt19_vorbaugruppe1, Enclosure_gt19_vorbaugruppe1

Drawing No. IP6x Test, Micropilot FMR51, IP6x Test, Micropilot FMR51

Drawing No. IP6x Test, Micropilot FMR54, IP6x Test, Micropilot FMR54

Drawing No. IPx5 Test, Micropilot FMR57, IPx5 Test, Micropilot FMR57

Drawing No. IPx6 Test, Micropilot FMR57, IPx6 Test, Micropilot FMR57

Drawing No. IPx7 Test, Micropilot FMR51, IPx7 Test, Micropilot FMR51

Drawing No. IPx7 Test, Micropilot FMR53, IPx7 Test, Micropilot FMR53

Drawing No. IPx7 Test, Micropilot FMR57, IPx7 Test, Micropilot FMR57

Drawing No. IPx8 Test, Micropilot FMR57, IPx8 Test, Micropilot FMR57

Drawing No. S134701E1, Flame Test Report, Phoenix Testlab, 25-Oct-2013

Drawing No. U133777E1, ENV Testreport - FMR51, Phoenix Testlab, Sep-Oct 2013

Drawing No. U133777E2, ENV Testreport - FMR54, Phoenix Testlab, Sep-Oct 2013

Drawing No. Z-65.16-524_130716, Temperatur Testreport

Drawing No. SW_Freigabe_FMRx_FF_V01.01.00, SW_Freigabe_FMRx_FF_V01.01.00

Drawing No. SW_Freigabe_FMRx_PA_V01.01.00, SW_Freigabe_FMRx_PA_V01.01.00

Drawing No. 970008315_AK_mit US, FMR51 EMC TestReport 6GHz, E+H Testlab, Maulburg, 13-09-2021

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Ex Certifications

Drawing No. CML 21UKEX2141X Issue 0, Ex Approval - UK

Drawing No. FM19US0045X_Supp02, Ex Approval - FM

Drawing No. PTB12ATEX2018X_Issue4, Ex Approval - ATEX

Drawing No. IECEXPTB12.0044X_Issue4, Ex Approval - IECEX

Drawing No. CSA2675458_80193693_CoC, Ex Approval - CSA, Rev. 19-01-2024

Terms of Validity:

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STANDARDS

ABS Rules:

2024 Marine Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-6-2/9.11.3, 4-6-4/11.7, 4-6-4/13.5.6(d), 4.6.4/15.3.4(d), 4-8-3/1.7, 4-8-3/1.11, 4-8-3/1.17, 4-8-3/13.1, 4-9-9/13.1, 4-9-9/Table 1

2024 Mobile Offshore Units Rules 1-1-4/9.7, 1-1-A2, 1-1-A3, 4-2-3/3.7, 4-2-4/13.7.6, 4-3-1/11, 4-3-1/15, 4-3-1/17.1, 4.3.3/9.1.1

National:

NA

International:

NA

Government:

NA

EUMED:

NA

OTHERS:

NA