



1. EU-TYPE EXAMINATION CERTIFICATE

2. Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU

3. EU-Type Examination Certificate No: **FM25ATEX0018X**

4. Equipment or protective system:
(Type Reference and Name) **FMR20B/30B Radar Level Device**

5. Name of Applicant: **Endress+Hauser SE+Co. KG**

6. Address of Applicant **Hauptstrasse 1, Maulburg D-79689, Germany**

7. This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and documents therein referred to.

8. FM Approvals Europe Ltd, notified body number 2809 in accordance with Article 17 of Directive 2014/34/EU of 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number:

PR471167 dated 7 July 2025

9. Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN IEC 60079-0:2018, EN 60079-11:2012, EN 60529:1991+A1:2000+A2:2013

10. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.

11. This EU-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12. The marking of the equipment or protective system shall include:



See Annex

Certificate issued by:

FM Approvals

8 July 2025

Certification Manager, FM Approvals Europe Ltd.

Date

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F ATEX 020 (Jul/2024)



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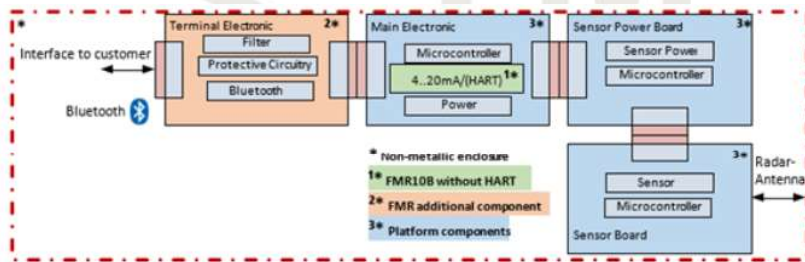
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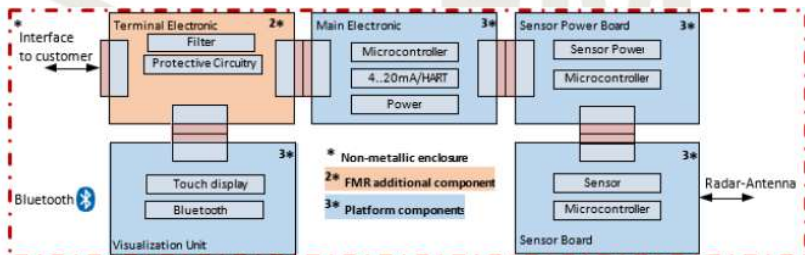
13. Description of Equipment or Protective System:

General - The FMR 20B/30B is a radar level device which converts a time-of-flight wave signal into an electrical output signal. The environment can be a hazardous area with gas or dust atmosphere. The FMR20B/30B has an 80GHz radar sensor, which transmits the wave signal direct into air. The electronic transforms the time difference between the propagated wave and the received wave into an electrical signal which is evaluated and put out as a digital (HART) measurement value.

The Block diagram below describes the FMR20B. The Compact Platform components are shown below in blue color (Main Electronic), in orange color (Terminal Electronic) and Radar Sensor modules (Sensor Power Board and Sensor Board).



The Block diagram below describes the FMR30B. The Compact Platform components are shown in blue color (Main Electronic), in orange color (Terminal Electronic) and Radar Sensor modules (Sensor Power Board and Sensor Board).



For additional information on the electronics see the following:

Component	Component Certificates
Electronic Modules (Main electronic and Visualization Unit)	CSANe 24ATEX1149U
Radar Sensor Modules (Sensor Power Board and Sensor Board)	CSANe 24ATEX1175U

Construction - For details on enclosure options for Variant 1, Variant 2 and Variant 3, see document no. 961008308-A.

The FMR20B has an Ingress Protection rating of IP66, IP68.

The FMR30B has an Ingress Protection rating of IP66, IP67.

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Thermal Ratings -

Protection Type	Model Type	Permitted ambient and Process Temperature
Ex ia IIC	FMR20B/30B	-40°C to +70°C
Ex ia IIIB	FMR20B (only Variant 2) FMR30B	-40°C to +55°C

Electrical Ratings -

The device is DC supplied.

The following values for cables are only relevant for the FMR30B (all variants), as the cable must be connected by the customer himself. In contrast, the FMR20B (all variants) is supplied with a pre-installed cable (length can be ordered up to a maximum of 300m):

Cable Inductance $L_{\text{cable}} = 1 \mu\text{H/m}$

Cable Capacitance $C_{\text{cable}} = 200 \text{ pF/m}$

Designation	4...20mA HART (X100) L+ / L-
Ex ia IIC	$U_i \leq 30\text{V}$ $I_i \leq 100\text{mA}$ $P_i \leq 700\text{mW}$ $C_i = 18\text{nF}$ $L_i = 0\text{H}$
Ex ia IIIB	$U_i \leq 30\text{V}$ $I_i \leq 100\text{mA}$ $P_i \leq 650\text{mW}$ $C_i = 18\text{nF}$ $L_i = 0\text{H}$

See Annex for Model Codes

14. Specific Conditions of Use:

See Annex

15. Essential Health and Safety Requirements:

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

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16. Test and Assessment Procedure and Conditions:

This EU-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Europe Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Europe Ltd's ATEX Certification Scheme.

17. Schedule Drawings

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Notified Body.

18. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
8 July 2025	Original Issue.

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ANNEX

FMR20B - aa bb c d ee fff ggg h+(options) Radar Level Device

Markings:



II 1 G Ex ia IIC T4 Ga
II 1 D Ex ia IIIB T135°C Da

Description of Equipment:

aa	Approval: BA: ATEX/IEC II 1 G Ex ia IIC T4 Ga BK: ATEX/IEC II 1 D Ex ia IIIB T135°C Da
bb	Output: BA: 2-wire 4-20mA HART 9Y: Changes not explosion protection relevant
c	Display; Operation: B: LED D: LED + Bluetooth Y: Changes not explosion protection relevant
d	Electrical Connection: T: Pre-installed cable Y: Changes not explosion protection relevant
ee	Antenna: BM: PVDF encapsulated, 40mm / 1-1/2" BN: PVDF encapsulated, 80mm / 3" 99: Changes not explosion protection relevant
fff	Process Connection, cable entry: VCG: Thread ASME MNPT1 WDG: Thread G1 ISO228 XQ0: Without, cable entry lateral YYY: Changes not explosion protection relevant
ggg	Process Connection, antenna end: VEE: Thread ASME MNPT1-1/2, PVDF WEE: Thread ISO228 G1-1/2, PVDF XR0: Without, prepared for UNI throw flange > accessories 9YY: Changes not explosion protection relevant

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h	Cable Length: A: 5m/16ft B: 10m/32ft C: 15m/49ft D: 20m/65ft E: 30m/98ft F: 50m/164ft 1:...m 2:...ft 9: Changes not explosion protection relevant
(options)	Options: Not relevant for safety

Specific Conditions of Use:

1. To avoid electrostatic charging: Do not rub surfaces with a dry cloth.
2. In the event of additional or alternative special varnishing on the enclosure or other metal parts or for adhesive plates:
 - Observe the danger of electrostatic charging and discharge.
 - Do not install in the vicinity of processes (≤ 0.5 m) generating strong electrostatic charges.
3. Avoid sparks caused by impact and friction.
4. In the case of process connections made of polymeric material or with polymeric coatings, avoid electrostatic charging of the plastic surfaces.
5. The process connection of the device must be installed in such a way that guarantees a sufficiently tight joint (IP66/67).
6. Applications in which the process temperature exceeds the maximum surface temperature limits of the required maximum surface temperature: The ignition hazard posed by hot surfaces on the process connecting parts of the device must be taken into account
7. It is essential for the device to use a power supply that is galvanically isolated from earth.
8. When using an intrinsically safe barrier, the barrier must be connected to the same earth as the device.
9. Refer to the temperature tables for various ambient and process temperature ranges.

FMR30B - aa bb c d ee fff ggg h+(options) Radar Level Device

Markings:



II 1 G Ex ia IIC T4 Ga
II 1 D Ex ia IIIB T135°C Da

Description of Equipment:

aa	Approval: BA: ATEX/IEC II 1 G Ex ia IIC T4 Ga BK: ATEX/IEC II 1 D Ex ia IIIB T135°C Da
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bb	Output: BA: 2-wire 4-20mA HART 9Y: Changes not explosion protection relevant
c	Display; Operation: J: Color Display with Touch Control K: Color Display with Touch Control + Bluetooth Y: Changes not explosion protection relevant
d	Electrical Connection: A: Cable gland M20, plastic, IP66/67 H: Thread NPT1/2, IP66/67 J: Cable gland M20, plastic blue, IP66/67 Y: Changes not explosion protection relevant
ee	Antenna: BM: PVDF encapsulated, 40mm / 1-1/2" BN: PVDF encapsulated, 80mm / 3" 99: Changes not explosion protection relevant
fff	Process Connection, cable entry: XQ0: Without, cable entry on the side YYY: Changes not explosion protection relevant
ggg	Process Connection, antenna end: VEE: Thread ASME MNPT1-1/2, PVDF WEE: Thread ISO228 G1-1/2, PVDF XR0: Without, prepared for UNI throw flange > accessories 9YY: Changes not explosion protection relevant
h	Cable Length: 3: Without, customer side
(options)	Options: Not relevant for safety

Specific Conditions of Use:

1. To avoid electrostatic charging: Do not rub surfaces with a dry cloth.
2. In the event of additional or alternative special varnishing on the enclosure or other metal parts or for adhesive plates:
 - Observe the danger of electrostatic charging and discharge.
 - Do not install in the vicinity of processes (≤ 0.5 m) generating strong electrostatic charges.
3. Avoid sparks caused by impact and friction.
4. In the case of process connections made of polymeric material or with polymeric coatings, avoid electrostatic charging of the plastic surfaces.
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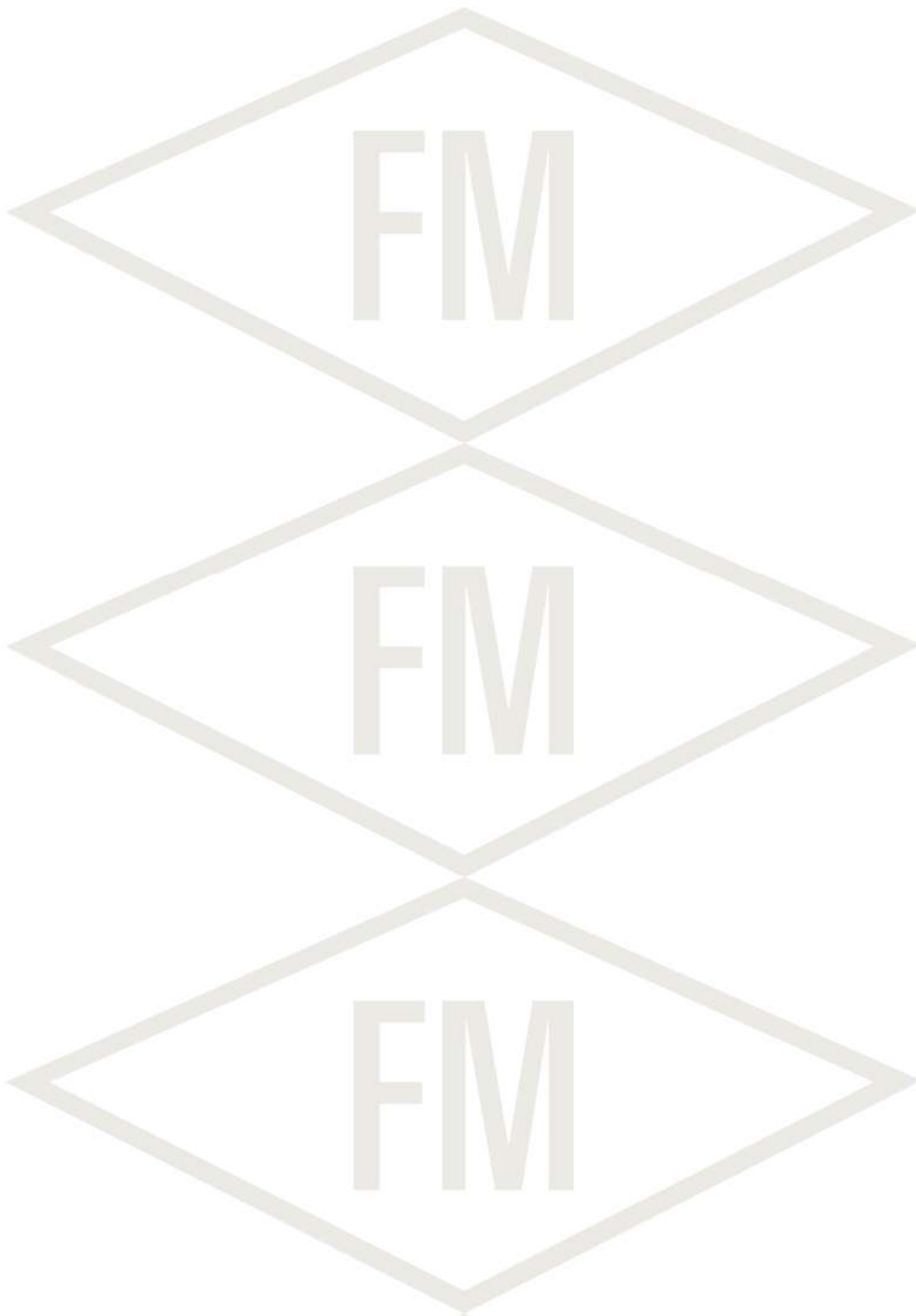
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8. When using an intrinsically safe barrier, the barrier must be connected to the same earth as the device.
9. Refer to the temperature tables for various ambient and process temperature ranges.



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Endress+Hauser SE+Co KG (1000001123)

Class No 3610

Original Project I.D. 471167

Certificate I.D. FM25ATEX0018X

<u>Drawing No.</u>	<u>Revision Level</u>	<u>Drawing Title</u>	<u>Last Report</u>
961005638	A	Electronic Modules	471167
961006632	A	Compact Platform AIC Electronic Module	471167
961006634	B	Addendum AIC MA20-01A IECEx+ CH-Platform	471167
961006636	A	Addendum AIC VA20-0XA IECEx+ CH-Platform	471167
961006639	A	Addendum AIC EA20-01A IECEx+ Compact Platform	471167
961006853	B	Compact Platform AIC FMR43 Sensors	471167
961007205	A	Radar Sensor Modules	471167
961007619	A	Overview FMR10/20/30B	471167
961007620	A	FMR10B Sensor DN40 nonEx	471167
961007621	A	FMR20B BV DN40/DN80	471167
961007622	A	FMR30B BV DN40/DN80	471167
961007623	A	Visualization unit FMR30B	471167
961007624	A	FMR10/20/30B electronic	471167
961007674	A	TA30 Circuit Diagram 00 "FMR10B/20B"	471167
961007676	A	TA30 Circuit Diagram 02 "FMR30B"	471167
961007967	A	Addendum AIC SR20-XXXA IECEx+ Compact Platform	471167
961008340	A	Namepl. IECEx_ATEX FMR30B-BK_Ex ia Da	471167
961008341	A	Namepl. IECEx_ATEX FMR20B-BK_Ex ia Da	471167
961008342	A	Namepl. IECEx_ATEX FMR20B-BA_Ex ia Ga	471167
961008343	A	Namepl. IECEx_ATEX FMR30B-BA_Ex ia Ga	471167
XA03510F	A	Safety Instructions FMR20B ATEX/IECEx	471167
XA03512F	A	Safety Instructions FMR30B ATEX/IECEx	471167