

CERTIFICATE OF CONFORMITY



1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
2. **Certificate No:** FM20US0034
3. **Equipment:** FLUXUS *7***-F20***-***NN*-***-* Ultrasonic Flowmeters
(Type Reference and Name) PIOX S7***-F20***-***NN*-***-* Ultrasonic Analyzers
4. **Name of Listing Company:** FLEXIM GmbH
5. **Address of Listing Company:** Boxberger Strasse 4
D-12681, Berlin
Germany
6. The examination and test results are recorded in confidential report number:

3026756 dated 4th December 2006
7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

FM Class 3600:2018, FM Class 3611:2018, FM Class 3810:2005, ANSI/UL 121201:2017,
ANSI/ISA 61010-1:2004, ANSI/IEC 60529:2004, UL50:2015, UL50E:2015
8. 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.
9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.

Certificate issued by:



J.E. Marquedant
VP, Manager - Electrical Systems

5 May 2021

Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmapprovals.com www.fmapprovals.com

SCHEDULE



US Certificate Of Conformity No: FM20US0034

10. Equipment Ratings:

Nonincendive for use in Class I, II, III, Division 2, Groups A, B, C, D, E, F, and G, for Hazardous (Classified) Indoor/Outdoor Locations. Temperature class and ambient temperature range, IP and Type enclosure ratings vary by model type as follows:

Model	Input Power	Temperature Class & Ambient Temperature Range	IP	Type
a7bbcc-F20dS1-ghijNNk-lmmmm-n	100 – 240 V	T4A -20°C ≤ Ta ≤ 55°C	65	-
a7bbcc-F20dA1-ghijNNk-lmmmm-n	AC	T4A -40°C ≤ Ta ≤ 55°C	66	4X
a7bbcc-F20dS2-ghijNNk-lmmmm-n	20 – 32 V DC	T5 -20°C ≤ Ta ≤ 60°C	65	-
a7bbcc-F20dA2-ghijNNk-lmmmm-n		T5 -40°C ≤ Ta ≤ 60°C	66	4X
a7bbcc-F20dS3-ghijNNk-lmmmm-n	11 – 16 V DC	T5 -20°C ≤ Ta ≤ 60°C	65	-
a7bbcc-F20dA3-ghijNNk-lmmmm-n		T5 -40°C ≤ Ta ≤ 60°C	66	4X

Refer to Section 12 for details concerning model code variables.

11. The marking of the equipment shall include:

Cl. I, II, III / Div. 2 / Gp. A, B, C, D, E, F, G / * / **

* / ** Marked temperature classification and ambient temperature range, IP and Type enclosure ratings vary by model type as defined in Section 10 of this Certificate.

12. **Description of Equipment:**

The Ultrasonic Flow Transmitters are designed to measure fluid flow in pipes together clamp-on flow transducers which are approved separately. The transducers are designed to be mounted onto a pipe for measurement of the flow within the pipe. They are designed to send and receive a sonic signal into the pipe which measures the flow rate. The system is powered by AC mains 100-240 VAC 50/60 Hz, 11-16 VDC or 20-32 VDC, depending upon version. The transmitter unit outputs high frequency pulses at a maximum of 140V for 1us at a duty cycle of 0.5%. The current draw average is negligible. An optional connection can also be made to a computer network. The Ultrasonic Flow Transmitter is housed in a powder coated aluminum or stainless steel enclosure designed to be part of a fixed installation. Provision for wiring entry is by way of six M20x1.5 threaded openings. The enclosure contains a window for monitoring the status of the system and for system setup and calibration.

Operation Temperature Range:

The ambient operating temperature range is:

a7bbcc-F20dSf-ghijNNk-lmmmm-n models: -20°C to 55°C (AC Version); -20°C to 60°C (DC Versions)

a7bbcc-F20dAf-ghijNNk-lmmmm-n models: -40°C to 55°C (AC Version); -40°C to 60°C (DC Version)

Model Code:

a7bbcc-F20def-ghijNNk-lmmmm-n

a = Fluid class: F, G, H, S

bb = Type: 21,22

cc = Application: Any two-letter combination

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA

T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmaprovals.com www.fmaprovals.com

SCHEDULE



US Certificate Of Conformity No: FM20US0034

- d = Number of channels: 1, 2
- e = Enclosure material: A, S
- f = Power: 1,2,3
- g = Output slot 1: N, A, P, H, I, U, V, F, B, C, R
- h = Amount: N, 1, 2, A, P
- i = Output slot 2: N, A, P, H, I, U, V, F, B, C, R
- j = Amount: N, 1, 2, A, P
- k = Binary outputs: N, Y, Z, R, U, V, D
- l = Connectivity: N, R, M, T, B, I, H, A, F
- m = Analog input: N, B, T, U, A
- m = Analog input: N, B, T, U, A
- m = Analog input: N, B, T, U, A
- m = Analog input: N, B, T, U, A
- n = Front end: L, W

13. Specific Conditions of Use:

None

14. Test and Assessment Procedure and Conditions:

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

15. Schedule Drawings

A copy of the technical documentation has been kept by FM Approvals.

16. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
9 th April 2020	Original Issue. Report Reference: RR222722 dated 9 th April 2020. Description of the Change: Relocated models Fluxus x721 and PIOX S721 from certificate FM18US0109 to new certificate FM20US0034 (both associated with Project ID 3026756). Apply new DC/DC converter. Update FM Class 3611 to 2018 edition. Add ANSI/UL 121201-2018 to list of applicable standards.
9 th June 2020	<u>Supplement 1:</u> Report Reference: RR223866 dated 9 th June 2020. Description of the Change: Added AFM2 Model code option "bb= 22". Corrected typographical errors in model code options.
16 th March 2021	<u>Supplement 2:</u> Report Reference: PR455834 dated 16 th March 2021 Description of the Change: Added Enclosure material Model code option "e = A". Updated operation temperature to -40°C for a7bbcc-F20dAf-ghijNNk-lmmm-n models. Corrected ANSI/UL 121201 approval standard to 2017 Ninth Edition.

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

SCHEDULE



US Certificate Of Conformity No: FM20US0034

5 th May 2021	<u>Supplement 3:</u> Report Reference: RR227881 dated 5 th May 2021. Description of the Change: Minor model code update. Added a fourth designator "m" to model code.
--------------------------	--

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC. 1151 Boston-Providence Turnpike, Norwood, MA 02062 USA
T: +1 (1) 781 762 4300 F: +1 (1) 781 762 9375 E-mail: information@fmaprovals.com www.fmaprovals.com