

CERTIFICATE OF CONFORMITY



1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**

2. **Certificate No:** FM21US0087X
3. **Equipment:** HMT370EX Series
(Type Reference and Name) Humidity and Temperature Transmitter

4. **Name of Listing Company:** Vaisala Oyj

5. **Address of Listing Company:** Vanha Nurmijarventie 21
Vantaa 01670
Finland

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

PR460030 dated 10th December 2021

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 3610:2021, FM Class 3810:2021,
ANSI/UL 60079-0:2020, ANSI/UL 60079-11:2014, ANSI/ISA 61010-1:2012, ANSI/IEC 60529:2004

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.

Certificate issued by:

J.E. Marquedant
VP, Manager - Electrical Systems

10 December 2021

Date

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

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



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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.

10. Equipment Ratings:

Intrinsically Safe for:

Class I, II, III Division 1, Groups A, B, C, D, E, F and G, T4

Class I, Zone 0, AEx ia IIC T4

Zone 20, AEx ia IIIC Temperature Code T85°C

Ta: -40°C to +60°C; IP54

11. The marking of the equipment shall include:

IS Class I, II, III, Division 1, Groups A, B, C, D, E, F, G; T4, -40°C ≤ Ta ≤ +60°C; Entity

Class I, Zone 0, AEx ia IIC T4 Ga -40°C ≤ Ta ≤ +60°C; Entity

Zone 20, AEx ia IIIC T85°C Da Ta: -40°C to +60°C; Entity

IP54

12. **Description of Equipment:**

General - Vaisala Intrinsically Safe Humidity and Temperature Transmitter HMT370EX Series is a current loop (4...20 mA) powered intrinsically safe humidity and temperature transmitter intended to be used in areas containing explosive gas or dust atmospheres. Equipment consists of the HMT370EX transmitter and HMP370EX probe. The HMT370EX consist of three main parts: the transmitter body, a detachable probe body and a probe head attached to the probe body, either directly or with a cable.

Construction - Transmitter and probe bodies are aluminum with 20 μm thick anodizing. The Transmitter enclosure Type of Protection is IP54. On the transmitter without display there is a LED light guide on the cover of the enclosure. There is a small hole sealed with a gore vent on the back of the transmitter enclosure. There are Multimeter test points for both analog output channels and a Service port for PC connection, inside the Transmitter body which must only be use in a safe area with the Vaisala accessory PC connection cable.

A series of probes (HMP370EX) are available in the HMT370EX series. They all have the same probe body, but different probe head. The differences between the probes are process interface, temperature range and pressure range. Probe heads come with three different cable lengths.

The probe can only be used together with the transmitter body in explosive atmospheres. In safe area, transmitter and probe can be used with Vaisala USB-cable connected to a PC. The enclosure is provided with two (2) M20 x 1.5 openings.

Ratings - The Humidity and Temperature Transmitter HMT370EX Series operate at 28 Vdc. The transmitters are rated for use in an ambient temperature range of -40°C to +60°C. The transmitter probes are rated for use in a process temperature range of -40°C to +180°C.

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HMT370EX123456789101112. Transmitter and Probe or Transmitter only

Entity Parameters:

Terminals	V _{Max} (V)	I _{Max} (mA)	P _{Max} (W)	C _i (nF)	L _i (μH)
Ch 1: + and -	28	100	0.7	12.1	16
Ch 2: + and -	28	100	0.7	12.1	16

- 1 = Probe model: 0, 1, 3, 4, 5, 7, 8, F, H
- 2 = Ex Certification, Region and Product Markings: 5
- 3 = Probe Cable Length and Sensor:
0, A, B, C, D, E, F, G, H, J, K, L, M, N, P, R, S, T, U, V, W, Y, Z, 1, 2, 3, 4, 5, 6, 7
- 4 = Sensor Protection: 0, 1, 2, 3, 4, 5
- 5 = Probe Accessories: N, B, C, D, E, F, G, H, J, K, L, M
- 6 = Transmitter type: A, B
- 7 = Output Units: 1, 2, J
- 8 = Analog Outputs (Channel1): J, L, N, A, B, C, D, E, H, M, P, R, S, X
- 9 = Analog Outputs (Channel2): J, L, N, A, B, C, D, E, H, M, P, R, S, X
- 10 = Cable Lead-through: 0, 1, 2, 3, 4, 5, 6, 7, 8
- 11 = Transmitter Accessories: N, A, B, C, D, E, F, G
- 12 = Reserved: N

Two transmitter body types are available in HMT370EX series:

Model Code option 6 - Transmitter type	Model Explanation	Tamb range	Temperature class
A	Transmitter without Display and Keypad. Red and Green LED indicator.	-40°C to +60°C	T4
B	Transmitter with Display and 4 button keypad	-40°C to +60°C	T4

The available probe models are listed below:

Model Code option 1 - Probe model	Model	Explanation	Cable length (m)	Ambient temperature range	Probe head temperature	Probe head temp.	Probe head pressure range (MPa)
1	HMP371	for wall mounting	No Cable	-40°C to +60°C	-40°C to +60°C	T4	

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3	HMP373	for confined spaces	2, 5 & 10	-40°C to +60°C	-40°C to +55°C -40°C to +100°C -40°C to +120°C	T6 T5 T4	
4	HMP374	for pressurized spaces	2, 5 & 10	-40°C to +60°C	-70°C to +55°C -70°C to +100°C -70°C to +135°C -70°C to +180°C	T6 T5 T4 T3	0 to 10
5	HMP375	for high temperatures	2, 5 & 10	-40°C to +60°C	-70°C to +55°C -70°C to +100°C -70°C to +135°C -70°C to +180°C	T6 T5 T4 T3	
7	HMP377	for high humidities	2, 5 & 10	-40°C to +60°C	-70°C to +55°C -70°C to +100°C -70°C to +135°C -70°C to +180°C	T6 T5 T4 T3	0 to 1
8	HMP378	for pressurized pipelines	2, 5 & 10	-40°C to +60°C	-70°C to +55°C -70°C to +100°C -70°C to +135°C -70°C to +180°C	T6 T5 T4 T3	0 to 4
F	HMP378F	for moisture in oil	2, 5 & 10	-40°C to +60°C	-70°C to +55°C -70°C to +100°C -70°C to +135°C -70°C to +180°C	T6 T5 T4 T3	0 to 4
H	HMP378H	for moisture in fuel	2, 5 & 10	-40°C to +60°C	-70°C to +55°C -70°C to +100°C -70°C to +135°C -70°C to +180°C	T6 T5 T4 T3	0 to 4

13. Specific Conditions of Use:

1. *Potential risk of sparking from aluminum alloy enclosure. The equipment shall be installed in such manner as to prevent the possibility of sparks resulting from friction or impact against the enclosure.*
2. *The cable glands and blanking elements used with the transmitter shall conform to requirements of ANSI/UL 60079-0*

14. Test and Assessment Procedure and Conditions:

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

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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
10 th December 2021	Original Issue.

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