

## EU DECLARATION OF CONFORMITY

Manufacturer: Vaisala Oyj

Post address: PL 26, FIN-00421 Helsinki

Street address: Vanha Nurmijärventie 21, Vantaa, Finland

This declaration of conformity is issued under the sole responsibility of the manufacturer. Object of the declaration:

### **HMT360 -series Intrinsically safe Humidity and Temperature transmitters**

The object of the declaration described above is in conformity with Directives:

ATEX Directive (2014/34/EU of 26 February 2014)

EMC Directive (2014/30/EU of 26 February 2014)

ROHS Directive (2011/65/EU of 8 June 2011)

The conformity is declared with using the following standards:

EN 60079-0 (2012)

EN 60079-11 (2012)

EC-type examination certificate number: VTT 09 ATEX 028X issue No:3

EN 61326-1:2013 Electrical equipment for measurement, control and laboratory use - EMC requirements - for use in industrial locations.

EN 55022:2010 Class B. Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement.

EN 50581:2012 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Vantaa 2016-07-06



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Jukka Lyömiö  
Standards and Approvals Manager

## HMT360 TRANSMITTER: DESCRIPTION

### Transmitter unit:

The **HMT360** transmitters have independent transmitter body and probe units to be attached together. The HMP360 -series probes are used only with the HMT360 transmitter.

### Probe types:

HMT360 transmitter can be equipped with the following probe units, with different kinds of sensor heads and cable lengths 2m, 5m and 10m.

The probe types covered by this D.O.C are:

**HMP361** - short probe for wall mounting

**HMT362** - small pressure-tight flanged probe

**HMP363** - small probe head (diameter 13.5 mm) for tight spaces

**HMP364** - probe for pressurized spaces up to 100 bar

**HMP365** - probe for high temperatures up to +180 °C

**HMP367** - probe for high humidities

**HMP368** - probe for installations in pressurized pipelines (up to 40 bars)

- End of list -



1. **PRODUCTION QUALITY ASSESSMENT NOTIFICATION**
2. **Equipment or Protective Systems Intended for use in  
Potentially explosive atmospheres  
Directive 94/9/EC**
3. Reference: **VTT 09 ATEX Q 001**
4. Equipment: **Humidity and temperature transmitter with the  
protection concept intrinsic safety "i" and  
protection by enclosure "t"**
5. Manufacturer: **Vaisala Oyj  
Vanha Nurmijärventie 21  
FI-01670 Vantaa  
Finland**
6. VTT Expert Services Ltd, notified body number 0537, in accordance with Article 9 of the Council Directive 94/9/EC of March 1994, notifies that the manufacturer has a production quality system which complies with Annex IV of the Directive. Compliance has been assured by compliance with the standard EN ISO/IEC 80079-34.
7. The Production Quality Assurance guarantees conformity of the equipment and the component with the protection concept referred in the clause 4. The equipment and the component can be placed on the market and put into service if properly installed and maintained and used for its intended purpose.
8. This notification, valid until 10.6.2018, is based upon an audit report VTT-S-02615-15 and the former notifications. This notification can be withdrawn if the manufacturer no longer satisfies to the requirements of Annex IV of the Directive. Results of periodical reassessments of the quality system are part of this notification.
9. The EC-Type Examination certificates covered by this Notification are agreed between the Manufacturer and VTT Expert Services Ltd.

Espoo, 5.6.2015

**VTT Expert Services Ltd**



Martti Siirola  
Senior Expert



Risto Sulonen  
Product Manager





# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: IECEx VTT 09.0002X

Issue No: 3

Certificate history:

Status: **Current**

Page 1 of 4

Issue No. 3 (2015-05-29)

Date of Issue: **2015-05-29**

Issue No. 2 (2011-04-06)

Issue No. 1 (2009-08-26)

Issue No. 0 (2009-06-10)

Applicant: **Valsala Oyj**  
Vanha Nurmijärventie 21  
FI-01670 Vantaa  
**Finland**

Electrical Apparatus: **Humidity and temperature transmitter type HMT360**  
Optional accessory:

Type of Protection: **Intrinsic safety**

Marking: **Ex ia IIC T4 Ga**

Approved for issue on behalf of the IECEx  
Certification Body:

Jenni Hirvelä

Position:

Expert

Signature:  
(for printed version)

Date:

2015-05-29

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

**VTT Technical Research Centre of Finland**  
Otakaari 7 B, Espoo  
P.O.Box 1000  
FI-02044 VTT  
Finland





# IECEx Certificate of Conformity

Certificate No: IECEx VTT 09.0002X

Issue No: 3

Date of Issue: 2015-05-29

Page 2 of 4

Manufacturer: **Vaisala Oyj**  
Vanha Nurmijärventie 21  
FI-01670 Vantaa  
**Finland**

Additional Manufacturing  
location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

## STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

**IEC 60079-0 : 2011** Explosive atmospheres - Part 0: General requirements

Edition:6.0

**IEC 60079-11 : 2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

Edition:6.0

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

## TEST & ASSESSMENT REPORTS:

*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

[FI/VTT/ExTR09.0002/03](#)

Quality Assessment Report:

[FI/VTT/QAR09.0001/03](#)



# IECEx Certificate of Conformity

Certificate No: IECEx VTT 09.0002X

Issue No: 3

Date of Issue: 2015-05-29

Page 3 of 4

## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The humidity and temperature transmitter, type HMT 360, for the measurement of temperature and humidity with the following associated sensor heads:

HMP361 wall-mounting probe  
HMP362 probe can be used in conjunction with sampling cells  
HMP363 probe for restricted space  
HMP364 probe for low and high pressure  
HMP365 probe for elevated temperature  
HMP367 probe for high moisture applications  
HMP368 probe for pressure pipes or liquids

Electrical data (maximum values per channel):

U<sub>i</sub> = 28 V  
I<sub>i</sub> = 100 mA  
P<sub>i</sub> = 700 mW  
C<sub>i</sub> = 1 nF  
L<sub>i</sub> negligibly low

### CONDITIONS OF CERTIFICATION: YES as shown below:

- 1) The equipment with display window and/or with associated cable of the sensor head can be used in Zone 0 Group IIC areas only if the danger of ignition due to electrostatic charge is avoided
- 2) With the installation of the equipment in Zone 0 Group II area it has to be ensured that sparks due impact or friction do not occur.
- 3) The serial interface must only be used outside the explosion hazardous area. The associated serial interface cable 25905ZZ is to be used.
- 4) Allowed ambient temperature range is -40 °C...+60 °C for the transmitter.
- 5) For the probe types HMP362, HMP364, HMP365, HMP 367 and HMP368 the allowed ambient temperature range is -70 °C...+120 °C for the temperature class T4 and the allowed ambient temperature range is -70 °C...+180 °C for the temperature class T3.
- 6) For the probe type HMP361 the allowed ambient temperature range is -40 °C...+60 °C and the temperature class is T4.
- 7) For the probe type HMP363 the allowed ambient temperature range is -40 °C...+120 °C and the temperature class is T4.



# IECEx Certificate of Conformity

Certificate No: IECEx VTT 09.0002X

Issue No: 3

Date of Issue: **2015-05-29**

Page 4 of 4

**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

The probe sensors may be situated in other ambient temperature than the transmitter according to the conditions of certification mentioned above.





# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.:	IECEx VTT 12.0016X	issue No.:0	Certificate history:
Status:	Current		
Date of Issue:	2013-02-01	Page 1 of 3	
Applicant:	<b>Vaisala Oyj</b> Vanha Nurmijärventie 21 FI-01670 Vantaa Finland <b>Finland</b>		
Electrical Apparatus:	<b>Humidity and Temperature transmitter type HMT 360</b>		
Optional accessory:			
Type of Protection:	<b>Ex ta</b>		
Marking:	<b>Ex ta IIIC T<sub>500</sub> 80 °C Da</b>		
Approved for issue on behalf of the IECEx Certification Body:	Tiina Ala-Outinen		
Position:	Manager, Services		
Signature: (for printed version)			
Date:	<u>1.2.2013</u>		

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

**VTT Expert Services Ltd.**  
Kivimiehentie 4, Espoo  
P.O.Box 1001  
FI-02044 VTT  
Finland







# IECEx Certificate of Conformity

Certificate No.: IECEx VTT 12.0016X

Date of Issue: 2013-02-01

Issue No.: 0

Page 2 of 3

Manufacturer: **Vaisala Oyj**  
Vanha Nurmijärventie 21  
FI-01670 Vantaa  
Finland  
**Finland**

Additional Manufacturing location  
(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

## STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identification documents, was found to comply with the following standards:

**IEC 60079-0 : 2011**

Edition: 6.0

Explosive atmospheres - Part 0: General requirements

**IEC 60079-31 : 2008**

Edition: 1

Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

## TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

### Test Report:

[FI/VTT/ExTR12.0010/00](#)

### Quality Assessment Report:

[FI/VTT/QAR09.0001/02](#)



# IECEx Certificate of Conformity

Certificate No.: IECEx VTT 12.0016X

Date of Issue: 2013-02-01

Issue No.: 0

Page 3 of 3

## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The humidity and temperature transmitter, type HMT 360 protected with a stainless steel cover, for the measurement of temperature and humidity with the following associated sensor heads:

- HMP361 wall-mounting probe
- HMP362 probe can be used in conjunction with sampling cells
- HMP363 probe for restricted space
- HMP364 probe for low and high pressure
- HMP365 probe for elevated temperature
- HMP367 probe for high moisture applications
- HMP368 probe for pressure pipes or liquids

Electrical data (maximum values per channel):

$U_i = 28 \text{ V}$ ,  $I_i = 100 \text{ mA}$ ,  $P_i = 700 \text{ mW}$ ,  $C_i = 1 \text{ nF}$ ,  $L_i$  negligibly low

### CONDITIONS OF CERTIFICATION: YES as shown below:

The permissible ambient temperature range is  $-40 \text{ }^{\circ}\text{C} \leq T_{\text{amb}} \leq +60 \text{ }^{\circ}\text{C}$ .

The serial interface must only be used outside the explosion hazardous area. The associated serial interface cable 25905ZZ is to be used.

The transmitter must be supplied with appropriate associate Exi apparatus to fulfil the input values.

The transmitter shall be protected against impacts with a protective cover.



1. **EC-TYPE EXAMINATION CERTIFICATE**
2. **Equipment or Protective Systems Intended for use in  
Potentially explosive atmospheres  
Directive 94/9/EC**
3. Reference: **VTT 09 ATEX 028X Issue 3**
4. Equipment: **Humidity and temperature transmitter**  
Certified types: **HMT 360**
5. Manufactured by: **Vaisala Oyj**
6. Address: **Vanha Nurmijärventie 21  
FI-01670 Vantaa  
Finland**
7. This equipment and any acceptable variations thereto are specified in the schedule and possible supplement(s) to this certificate and the documents therein referred to.
8. VTT Expert Services Ltd, notified body number 0537, in accordance with Article 9 of the Council Directive 94/9/EC of March 1994, certifies that the assembly has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.
9. The examination and test results are recorded in confidential Report no. VTT-S-02274-15.
10. Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 60079-0 (2012)**  
**EN 60079-11 (2012)**



11. If the sign "X" is placed after the certificate number, it indicates that this equipment is subject to special conditions for safe use specified in the schedule to this Certificate
12. This EC-Type examination certificate relates only to the design, examination and tests of the specified equipment in accordance to the directive 94/9/EC.  
  
Further requirements of the Directive may apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.
13. The marking of the equipment shall include the following:



**II 1 G**

**Ex ia IIC T4 Ga**

Espoo, 29.05.2015

VTT Expert Services Ltd



Kari Koskela  
Expert



Martti Siirola  
Senior Expert

14. **Schedule**

15. **EC-TYPE EXAMINATION CERTIFICATE VTT 09 ATEX 028X Issue 3**

16. Description of equipment:

The humidity and temperature transmitter, type HMT 360, for the measurement of temperature and humidity with the following associated sensor heads:

HMP361 wall-mounting probe  
HMP362 probe can be used in conjunction with sampling cells  
HMP363 probe for restricted space  
HMP364 probe for low and high pressure  
HMP365 probe for elevated temperature  
HMP367 probe for high moisture applications  
HMP368 probe for pressure pipes or liquids

Electrical data (maximum values per channel):

$U_i = 28 \text{ V}$ ,  $I_i = 100 \text{ mA}$ ,  $P_i = 700 \text{ mW}$ ,  $C_i = 1 \text{ nF}$ ,  $L_i$  negligibly low

7. Report No. VTT-S-02274-15

18. Special conditions for safe use

- 1) The equipment with display window and/or with associated cable of the sensor head can be used in Zone 0 Group IIC areas only if the danger of ignition due to electrostatic charge is avoided.
- 2) With the installation of the equipment in Zone 0 Group II area it has to be ensured that sparks due impact or friction do not occur.
- 3) The serial interface must only be used outside the explosion hazardous area. The associated serial interface cable 25905ZZ is to be used
- 4) Allowed ambient temperature range is  $-40 \text{ }^{\circ}\text{C} \dots +60 \text{ }^{\circ}\text{C}$  for the transmitter.
- 5) For the probe types HMP362, HMP364, HMP365, HMP 367 and HMP368 the allowed ambient temperature range is  $-70 \text{ }^{\circ}\text{C} \dots +120 \text{ }^{\circ}\text{C}$  for the temperature class T4 and the allowed ambient temperature range is  $-70 \text{ }^{\circ}\text{C} \dots +180 \text{ }^{\circ}\text{C}$  for the temperature class T3.
- 6) For the probe type HMP361 the allowed ambient temperature range is  $-40 \text{ }^{\circ}\text{C} \dots +60 \text{ }^{\circ}\text{C}$  and the temperature class is T4.
- 7) For the probe type HMP363 the allowed ambient temperature range is  $-40 \text{ }^{\circ}\text{C} \dots +120 \text{ }^{\circ}\text{C}$  and the temperature class is T4.

19. Essential Health and Safety Requirements

Met by compliance with the standards listed on the front page.

Certificate history

Issue	Date	Report No.	Comment
-	2009-06-11	VTT-S-03434-09	<b>Prime certificate</b>
1	2009-08-26	-	<b>EPL Ga marking added Expansion of ambient temp. range</b>
2	2011-04-06	VTT-S-02707-11	<b>Changes in HM360PRB documents</b>
3	2015-05-29	VTT-S-02274-15	<b>Allowed ambient temperature range of the probes added.</b>

Espoo, 29.05.2015

VTT Expert Services Ltd



Kari Koskela  
Expert



Martti Siirola  
Senior Expert





1. **EC-TYPE EXAMINATION CERTIFICATE**

2. **Equipment or Protective System Intended for use  
in Potentially explosive atmospheres  
Directive 94/9/EC**

3. Reference: **VTT 04 ATEX 023X Issue 1**

4. Equipment: **Humidity and temperature transmitter**

Certified types: **HMT 360**

5. Manufactured by: **Vaisala Oyj**

6. Address: **Vanha Nurmijärventie 21  
FI-01670 Vantaa  
Finland**

7. This equipment and any acceptable variations thereto are specified in the schedule and possible supplement(s) to this certificate and the documents therein referred to.

8. VTT Expert Services Ltd, notified body number 0537, in accordance with Article 9 of the Council Directive 94/9/EC of March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective system intended for use in potentially explosive atmospheres given in Annex II to the Directive

9. The examination and test results are recorded in confidential reports no TUO26-044075 and VTT-S-08067-12.

10. Compliance with the Essential Health and Safety Requirements has been assured by compliance with the standards:

**EN 60079-0:2012  
EN 60079-31:2009**





11. If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.
12. This EC-Type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. This certificate does not cover these.
13. The marking of the equipment or protective system shall include the following:




**II 1 D**

**Ex ta IIC T<sub>500</sub> 80 °C Da**  
**-40 °C ≤ T<sub>amb</sub> ≤ +60 °C**

Espoo, 1.2.2013

VTT Expert Services Ltd.



Risto Sulonen  
Product Manager



Martti Siirola  
Senior Expert

14. **Schedule**15. **EC-TYPE EXAMINATION CERTIFICATE VTT 04 ATEX 023X Issue 1**16. Description of Equipment

The humidity and temperature transmitter, type HMT 360 protected with a stainless steel cover, for the measurement of temperature and humidity with the following associated sensor heads:

HMP361 wall-mounting probe  
HMP362 probe can be used in conjunction with sampling cells  
HMP363 probe for restricted space  
HMP364 probe for low and high pressure  
HMP365 probe for elevated temperature  
HMP367 probe for high moisture applications  
HMP368 probe for pressure pipes or liquids

Electrical data (maximum values per channel):

**$U_i = 28 \text{ V}$ ,  $I_i = 100 \text{ mA}$ ,  $P_i = 700 \text{ mW}$ ,  $C_i = 1 \text{ nF}$ ,  $L_i$  negligibly low**

Documents:

Mentioned in the test report VTT-S-08067-12

17. Report No. VTT-S-08067-1218. Special conditions for safe use:

The permissible ambient temperature range is  $-40 \text{ °C} \leq T_a \leq +60 \text{ °C}$ .

The serial interface must only be used outside the explosion hazardous area. The associated serial interface cable 25905ZZ is to be used.

The transmitter must be supplied with appropriate Exi apparatus to fulfil the input values.

The transmitter must be protected with a protective cover against impacts.

19. Essential Health and Safety Requirements

Met by compliance with the standards referred in point 9.

Certificate history:

Issue	Date	Report No.	Comment
-	7.4.2004	TUO26-044075.	Prime certificate
1	1.2.2013	VTT-S-08067-12	Tested and documents and labels updated according to the new standards.

Espoo, 1.2.2013

VTT Expert Services Ltd



Risto Sulonen  
Product Manager



Martti Siirola  
Senior Expert

FM Approvals  
1151 Boston Providence Turnpike  
P.O. Box 9102 Norwood, MA 02062 USA  
T: 781 762 4300 F: 781-762-9375 [www.fmaprovals.com](http://www.fmaprovals.com)

# CERTIFICATE OF COMPLIANCE

## HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

**HMT360abcdefghi4jklAmn. Transmitter and Probe or Transmitter only.**

IS / I,II,III / 1 / ABCDEFG / T5 Ta = 60°C - DRW211603, Entity;

NI / I, / 2 / ABCD / T5 Ta = 60°C; S / II,III / 2 / FG / T5 Ta = 60°C

Entity Parameters:

	$V_{Max}$ (V)	$I_{Max}$ (mA)	$P_{Max}$ (W)	$C_i$ (nF)	$L_i$ (μH)
<i>Terminals</i>					
Ch 1: + and -	28	100	0.7	1	0
Ch 2: + and -	28	100	0.7	1	0

a = Probe type: 0, 1, 2, 3, 4, 5, 7 or 8.

b = Transmitter type: any single letter A-Z.

c = Display: 1 or 2.

d = Output channels: 1 or 2.

e = Analog output signal (Ch1): any single letter A-Z.

f = Analog output signal (Ch 2): any single letter A-Z.

g = Output range: any single letter A-Z.

h = Units: 1 or 2.

i = Cable bushings: A, B, C or 4.

j = Manual: Any single letter A-Z.

k = Cable length: (any single letter) A-Z or 0, 1, 2 or 3.

l = Humidity sensor: 0, 1, 2, 3, 4, 5, 6, 7 or A.

m = Sensor protection: 0, 1, 2, 3, 4, 6 or 7.

n = Installation kit: A-Z or 0.



### Equipment Ratings:

Intrinsically Safe Class I, II, III, Division 1, Groups A, B, C, D, E, F, & G; also as Class I, Zone 0, AEx ia IIC; in accordance with Entity requirements when installed per installation drawing DRW211603; and Nonincendive Class I, Division 2, Groups A, B, C, & D; Suitable for Class II & III, Division 2, Groups F & G, for use in an indoor hazardous (classified) locations with a temperature rating of T5, Ta = 60°C.

### FM Approved for:

Vaisala Oyj  
Helsinki, Finland

This certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

Class 3600	2011
Class 3610	2010
Class 3611	2004
Class 3810	2005

Original Project ID: 3010615

Approval Granted: January 9, 2002

### Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
3016167	March 14, 2003		
3017701	August 7, 2003		
030916	November 3, 2003		
051221	May 24, 2006		
091102	November 5, 2009		
3048304	August 8, 2013		

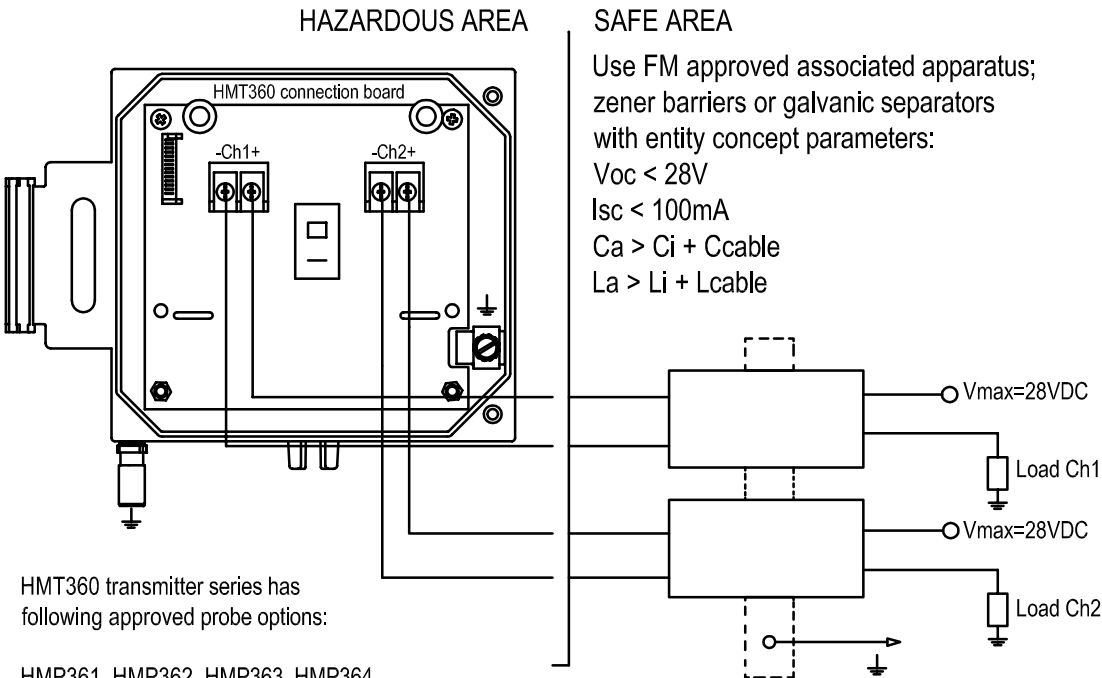
FM Approvals LLC

J.E. Marquedant  
Group Manager, Electrical

8 August 2013  
Date

REV	QTY	DESCRIPTION / INFO / ECO No.	DESIGN	CHECKED / Reviewed	ACCEPTED / Approved
B		List of approved probe types added	ECO212870	RHA	

Wiring diagram for intrinsically safe operation of the HMT360-series humidity and temperature transmitter.





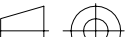
HMT360 transmitter series has following approved probe options:

HMP361, HMP362, HMP363, HMP364, HMP365, HMP367 & HMP368

HMT360-series transmitters are approved for use in Classes I, II and III, Division 1, Groups A - G and Division 2, Groups A - D, F and G.

Safety factors for HMT360-series transmitters are: Vmax=28V, Imax=100mA, Ci=1nF, Li=0, Pi=0.7W

- NOTE:
- Barrier installation must be completed in accordance with ANSI/ISA RP 12.6 and the National Electrical Code.
  - Intrinsically safe barrier ground must be less than 1 ohm.
  - Maximum safe area voltage is 250V.

General tolerance		ISO 2768-m		Design		<div> <b>VAISALA</b></div>	
Material		Weight		Supplier code			
Finish		<div></div>		DOCUMENT CREATION DATA		Title Assembly Instruction HMP360 and HMT360 VIN/HM	
YYYY-MM-DD				INITIALS			
Creator				01-07-18 ARH			
				Review		01-11-19 ARH	
				Approved		05-04-11 RHA	
				Archive ID		ACAD	
FIRST ANGLE PROJECTION		DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE SPECIFIED		Size		Code	
<div></div>						DRW211603	
						Rev	
						B	
				Scale		Sheet of	

NOTE: This information is CONFIDENTIAL and PROPRIETARY to VAISALA. It is furnished with understanding that the information will not be copied or disclosed without the written consent of VAISALA. These materials are subject to the exemption 5 U.S.C. Section 552 (b) (4) which provides that trade secrets and commercial or financial information shall not be disclosed to third parties.



# Certificate of Compliance

**Certificate:** 1300863

**Master Contract:** 213862

**Project:** 2759392

**Date Issued:** November 13, 2014

**Issued to:** Vaisala Oyj

P.O. Box 26  
Helsinki, 00421  
Finland

Attention: Jorma Lehtonen

*The products listed below are eligible to bear the CSA Mark shown*



**Issued by:** Zahra Amini

## **PRODUCTS**

**CLASS 2258 03** - PROCESS CONTROL EQUIPMENT - Intrinsically Safe and Non -  
Incendive Systems - For Hazardous Locations

Class I, Div.1 and Div.2, Groups A, B, C and D; Class II, Div.1 and Div.2, Groups G and Coal Dust; Class III

HMT 360 series, humidity and temperature transmitters, rated 28V, 4-20 mA, and provides intrinsically safe outputs to HMP36\* series probe when connected as per installation drawing DRW213478, Maximum ambient temperature 60°C, Temperature Code T4.

## **APPLICABLE REQUIREMENTS**

CSA Std C22.2 No. 142-M1987 - Process Control Equipment

CSA Std C22.2 No. 213-M1987 -Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations

CSA Std C22.2 No. 157-1992 -Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations





**Certificate:** 1300863

**Master Contract:** 213862

**Project:** 2759392

**Date Issued:** November 13, 2014

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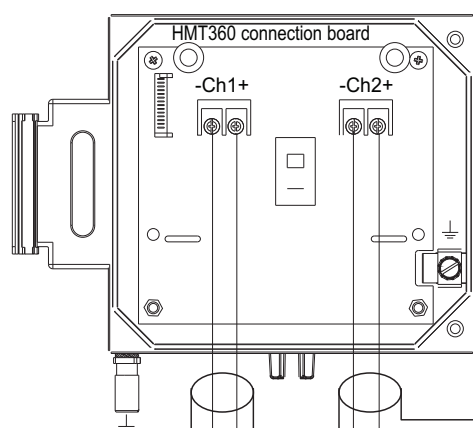
**MARKINGS**

- CSA Monogram
- Company name
- Model number
- Serial number
- Electrical ratings
- Exia Symbol
- Hazardous Location Designation
- Temperature Code T4 (135°C)
- Reference to installation drawing DRW213478
- Maximum Ambient Temperature (60°C)
- Statements re Intrinsically Safe
- Caution re. Substitution of components...
- Caution re. Do not disconnect ....

Ltr	Qty	Change	Reason/ ECO no	Design	Date Review	Date Appr
C		Probe types and barrier/isolator info updated	ECO212844	KKe	2006-06-20 RHA	2006-06-20 HJJ

## Wiring diagram for intrinsically safe operation of the HMT360-series humidity and temperature transmitter.

### HAZARDOUS AREA



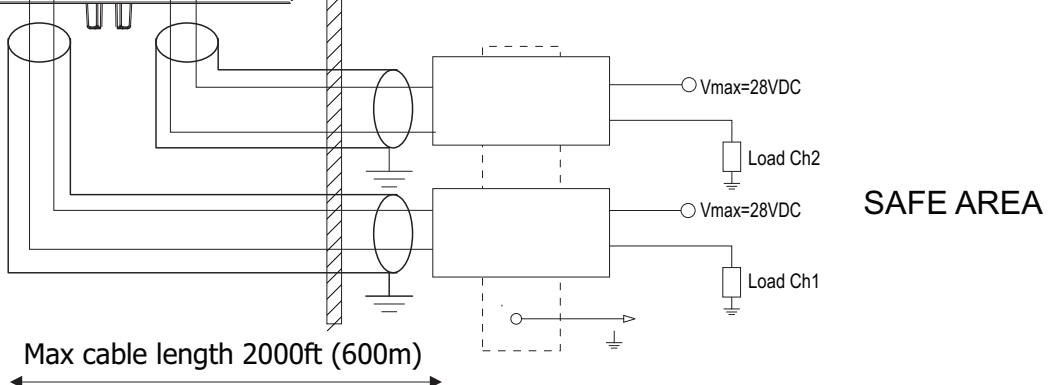
Vaisala offers following barrier and galvanic isolator types:

Manufacturer: Type: Vaisala code:

Barrier: R. Stahl 9001/51-280-091-141 210664  
Isolator: R. Stahl 9160/13-11-11 212483

If other barrier or galvanic isolator types are used, Vaisala or CSA do not take responsibility for the selected barrier's or galvanic isolator's suitability!

Cable parameters shall be less than 60pF/ft (197pF/m) and 0.2μH/ft (0.67μH/m). The maximum cable length is 2000ft (600m).



HMT360-series transmitters are approved for use in Division 1 and 2, Class I, Groups A, B, C, and D. Division 1, and 2, Class II, Group G and coal dust. Division 1, and 2, Class III.

#### NOTE:

- Each channel must be supplied through separate shielded cables.
- When using galvanic separators CH1- and CH2- must be short circuited with an external wire.
- When using transmitter in Class I, Division 2 the main switch shall not be operated or the unit shall not be disconnected unless power has been switched off, or area is known to be non hazardous.
- Use only conduit connection in Division 2.
- Substitution on components may impair intrinsic safety or suitability for Division 2.
- Only intrinsically safe installation is allowed in Class II and Class III environments.
- Intrinsically safe barrier ground must be less than 1 ohm.
- Maximum safe area voltage is 250V.

HMT360-series transmitters shall be used with following probes:

- Probe HMP361 with 127mm long pipe.
- Probe HMP362 with 2, 5 or 10 m length cable
- Probe HMP363 with 2, 5 or 10 m length cable
- Probe HMP364 with 2, 5 or 10 m length cable
- Probe HMP365 with 2, 5 or 10 m length cable
- Probe HMP367 with 2, 5 or 10 m length cable
- Probe HMP368 with 2, 5 or 10 m length cable




The material for associated cable is FEP (Tetrafluoropropylene) or for HMP363 also PUR (Polyurethane) available.

To avoid static discharge shall the cable cover with conductive material.

Drawn	KKe 2002-08-21	Arch id		Serial no		Sheet		Cooperator's doc no	
Review	IML 2002-10-06	Title		Vaisala Oyj Vanhanurmijärventie 21 Vantaa Finland					
Appr	KKe 2002-10-06								
Design									
Replaces	DRW213478B								
Replaced by		Scale		<b>Installation Drawing</b>				<b>DRW213478</b>	
								<b>C</b>	



防爆構造電気機械器具型式検定合格証

申請者	東京都新宿区神楽坂6丁目42番 ヴァイサラ株式会社		
製造者	Vanha Nurmijärventie 21 FI-01670 Vantaa Finland Vaisala Oyj		
品名	湿・温度変換器		
型式の名称	HMT3603A22BCA1A3BD5A10 (同一型式は別表のとおり)		
防爆構造の種類	本質安全防爆構造 (ia)		
対象ガス又は蒸気の 爆発等級及び発火度	IICT4		
定 格	本安回路許容電圧      28V 本安回路許容電流      100mA 本安回路許容電力      700mW 内部キャパシタンス      0.001μF 内部インダクタンス      無視できる値 周 囲 温 度      -40℃～+60℃		
使 用 条 件			
型式検定合格番号	第 TC20238 号		
有 効 期 間	平成24年 9月12日 から 平成27年 9月11日まで		 更新時 一部変更
	平成27年 9月12日 から 平成30年 9月11日まで		
	平成 年 月 日 から 平成 年 月 日まで		
	平成 年 月 日 から 平成 年 月 日まで		

機械等検定規則による型式検定に合格したことを証明する。

平成24年 9月12日

型式検定実施者    公益社団法人    産業安全技術協会長





# 防爆合格证

CONFORMITY CERTIFICATE OF EXPLOSION-PROOF

证 号  
Certificate No. CE14.2164

产品名称  
Name of Product  
型号及规格  
Type of Product  
防爆标志  
Marking  
技术文件  
Technical Documents  
图 号  
Drawing No.  
备 注  
Note (s)

本安型温湿度/露点变送器

HMT360 系列

Ex ia II C T4 Ga

1. 环境温度  $-40^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$ 。
2. 本安参数:  $U_i: 28\text{V}$ 、 $I_i: 100\text{ mA}$ 、 $P_i: 700\text{mW}$ 、 $C_i: 1\text{nF}$ 、 $L_i: 0\text{mH}$ 。
3. 本证可代表以下产品型号:  
HMT3601、HMT3603、HMT3604、HMT3605、HMT3607、HMT3608。
4. 制造商: Vaisala Oyj
5. 制造商地址: Vanha Nurmi järventie21, FI-01670 Vantaa, Finland

经对上述产品图样及技术文件的审查和样品的检验, 其符合以下标准:

By verifying the drawings and technical documents and checking samples, the product complies with the following standards:

GB3836.1-2010

GB3836.4-2010

发 给:  
Issued to:

维萨拉(北京)测量技术有限公司

本证失效日期:  
Date of Expire:

2019-09-23

发证日期:  
Date of Issue:

2014-09-23

中心印章  
Center seal



中心主任  
Director

刘红亮

石油和化学工业电气产品防爆质量监督检验中心  
Supervision & Test Center of Ex-products of China Petroleum & Chemical Industry

注: 本证仅对与送检样品一致的产品有效。

Note: This certificate is only valid for the products that are in accord with sample(s) tested and verified.

中心地址: 中国天津市丁字沽三号路 85 号

Center Add: No.85 No.3 Road DingZiGu Tianjin China Post code. 300131

E-mail: pcec@pcec.com.cn

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Tel/ Fax: 022-26651066/26689116

http://www.pcec.com.cn

电话/传真: 022-26651066/26689116





## СЕРТИФИКАТ СООТВЕТСТВИЯ

№ ТС RU C-FI.MШ06.B.00199

Серия RU № 0368258

## ОРГАН ПО СЕРТИФИКАЦИИ

Орган по сертификации горношахтного оборудования НАНИО «Центр по сертификации взрывозащищенного и рудничного электрооборудования», Адрес: Россия, 115230, Москва, Электролитный проезд, дом 1, корпус 4, комната № 9 (юридический); Россия, 140004, Московская область, город Люберцы, ВУГИ, ОАО «Завод «ЭКОМАШ» (фактический). Телефон: +7 (495) 5541257, 9716830, Факс: +7 (495) 5541257, 9716830, e-mail: solntsev@ccve.ru, Аттестат (№ РОСС RU.0001.11МШ06) выдан 17.10.2011 Федеральным агентством по техническому регулированию и метрологии. Приказ об аккредитации Федеральной службы по аккредитации № 3028 от 23.08.2012

## ЗАЯВИТЕЛЬ

Общество с ограниченной ответственностью «НПФ Раймет»,  
Россия, 141700, Московская область, город Долгопрудный, Лихачевское шоссе, дом 1,  
корпус 4, помещение НП-12. ОГРН: 1115047000738. Телефон: +7 (495) 646-10-25;  
факс: +7 (495) 471-48-34. E-mail: info@raimet.ru

## ИЗГОТОВИТЕЛЬ

Vaisala Oyj, Vanha Nurmijärventie 21, FI-01670 Vantaa, Финляндия.

## ПРОДУКЦИЯ

Трансмиттер влажности и температуры НМТ360 и датчики НМР361, НМР362, НМР363, НМР364, НМР365, НМР367, НМР368 с Ex-маркировкой согласно приложению (см. бланки №№ 0249127, 0249128). Серийный выпуск.

КОД ТН ВЭД ТС 9025 80 400 0

## СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ

Технического регламента Таможенного союза ТР ТС 012/2011  
«О безопасности оборудования для работы во взрывоопасных средах».

## СЕРТИФИКАТ ВЫДАН НА ОСНОВАНИИ

Протокола оценки конструкции и испытаний № 310.2015-Т от 22.12.2015 Испытательной лаборатории технических устройств Автономной некоммерческой организации «Национальный испытательный и научно-исследовательский институт оборудования для взрывоопасных сред» ИЛ ExТУ (аттестат № РОСС RU.0001.21МШ19, срок действия с 28.10.2011 по 28.10.2016);

Акта о результатах анализа состояния производства № 75-А/15 от 07.10.2015 Некоммерческой автономной научно-исследовательской организации «Центр по сертификации взрывозащищенного и рудничного электрооборудования»/Органа по сертификации горношахтного оборудования (аттестат № РОСС RU.0001.11МШ06, срок действия до 17.10.2016).

## ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ

Сертификат действителен с приложением на 2-х листах.

Условия хранения, срок службы указаны в эксплуатационной документации.

СРОК ДЕЙСТВИЯ С

21.01.2016

ПО

21.01.2021

ВКЛЮЧИТЕЛЬНО



Руководитель (уполномоченное  
лицо) органа по сертификации

Эксперт (эксперт-аудитор)  
(эксперты (эксперты-аудиторы))

*Кочев*  
(подпись)  
*Васильев*  
(подпись)

А.А. Коган  
(инициалы, фамилия)

В.Б. Солнцев  
(инициалы, фамилия)



## ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ТС RU C-FL.MШ06.B.00199 Лист 1

Серия RU № 0249127

## 1. НАЗНАЧЕНИЕ И ОБЛАСТЬ ПРИМЕНЕНИЯ

Трансмиттер влажности и температуры НМТ360 (далее – трансмиттер) и датчики НМР361, НМР362, НМР363, НМР364, НМР365, НМР367, НМР368 (далее – датчики) предназначены для измерения влажности и температуры газа.

Область применения – взрывоопасные зоны помещений и наружных установок согласно Ех-маркировке, ГОСТ Р МЭК 60079-14 – 2008, регламентирующих применение электрооборудования во взрывоопасных средах.

## 2. ОСНОВНЫЕ ТЕХНИЧЕСКИЕ ДАННЫЕ

2.1. Основные технические характеристики трансмиттера:

2.1.1. Ех-маркировка

0Ex ia IIC T4 Ga X

2.1.2. Класс электрооборудования по способу защиты человека от поражения электрическим током по ГОСТ 12.2.007.0-75

III

2.1.3. Степень защиты от внешних воздействий по ГОСТ 14254-96

IP54

2.1.4. Диапазон температуры окружающей среды, °C

-40 ... +60

2.1.5. Максимальные входные искробезопасные параметры приведены в табл. 1

Таблица 1

$U_i$ , В	$I_i$ , мА	$P_i$ , мВт	$C_i$ , нФ	$L_i$ , мкГн
28	100	700	1	22

2.1.6. Максимальные выходные искробезопасные параметры приведены в табл. 2

Таблица 2

$U_0$ , В	$I_0$ , мА	$C_0$ , мкФ	$L_0$ , мкГн
5	25	5	0,1

2.2. Основные технические характеристики датчиков:

2.2.1. Основные технические характеристики датчиков приведены в табл. 3

Таблица 3

Наименование	Условия применения	Диапазон температуры окружающей среды	Ех-маркировка
НМР361	Настенный монтаж	-40°C...+60°C	0Ex ia IIC T4 Ga X
НМР362	Конструкция с фланцем	-70°C...+120°C	0Ex ia IIC T4 Ga X
		-70°C...+180°C	0Ex ia IIC T3 Ga X
НМР363	Ограниченное пространство	-40°C...+120°C	0Ex ia IIC T4 Ga X
НМР364	Давление 0...10 МПа	-70°C...+120°C	0Ex ia IIC T4 Ga X
		-70°C...+180°C	0Ex ia IIC T3 Ga X
НМР365	Повышенная температура до 180°C	-70°C...+120°C	0Ex ia IIC T4 Ga X
		-70°C...+180°C	0Ex ia IIC T3 Ga X
НМР367	Повышенная влажность	-70°C...+120°C	0Ex ia IIC T4 Ga X
		-70°C...+180°C	0Ex ia IIC T3 Ga X
НМР368	Трубопроводы под давлением 0...4 МПа	-70°C...+120°C	0Ex ia IIC T4 Ga X
		-70°C...+180°C	0Ex ia IIC T3 Ga X

2.2.2. Максимальные входные искробезопасные параметры датчиков приведены в табл. 4

Таблица 4

$U_i$ , В	$I_i$ , мА	$C_i$ , нФ	$L_i$ , мкГн
5	25	5	0,1



Руководитель (уполномоченное лицо) органа по сертификации

Эксперт (эксперт-аудитор)  
(эксперты (эксперты-аудиторы))

*Коган*  
(подпись)  
*Солнцев*  
(подпись)

А.А. Коган  
(инициалы, фамилия)

В.Б. Солнцев  
(инициалы, фамилия)



## ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № TC RU C-FL.MШ06.B.00199 Лист 2

Серия RU № 0249128

## 3. ОПИСАНИЕ КОНСТРУКЦИИ И СРЕДСТВ ОБЕСПЕЧЕНИЯ ВЗРЫВОЗАЩИТЫ

Трансмиссер размещен в прямоугольном корпусе, на передней панели которого установлен ЖК-дисплей и кнопки управления. Внутри корпуса размещены печатные платы с компонентами электроники и разъемы для внутренних подключений.

Датчики выполнены в цилиндрическом корпусе из нержавеющей стали. Датчики предназначены только для работы вместе с трансмиттером. При подключении датчик устанавливается в непосредственной близости к трансмиттеру.

Подробное описание конструкции изложено в Руководстве пользователя EAC/CU approval draft 26 Nov 2015.

**Взрывозащищенность** трансмиттеров влажности и температуры HMT360 и датчиков HMP361, HMP362, HMP363, HMP364, HMP365, HMP367, HMP368 обеспечивается видом взрывозащиты «искробезопасная электрическая цепь» уровня «ia» по ГОСТ Р МЭК 60079-11-2010 Взрывоопасные среды. Часть 11. Искробезопасная электрическая цепь «i» и выполнением их конструкции в соответствии с требованиями ГОСТ Р МЭК 60079-0-2011 Взрывоопасные среды. Часть 0. Оборудование. Общие требования.

## 4. МАРКИРОВКА

**Маркировка**, наносимая на трансмиттер и датчики, должна включать в себя следующие данные:

- товарный знак или наименование предприятия-изготовителя;
- тип изделия;
- заводской номер и год выпуска;
- наименование органа по сертификации и номер сертификата;
- Ех-маркировку;
- специальный знак взрывобезопасности;
- максимальные входные искробезопасные параметры для трансмиттера, согласно табл. 1;
- максимальные выходные искробезопасные параметры для трансмиттера, согласно табл. 2
- максимальные входные искробезопасные параметры для датчиков, согласно табл. 4;
- диапазон температуры окружающей среды,

и другие данные, которые изготовитель должен отразить в маркировке, если это указано в технической документации.

## 5. СПЕЦИАЛЬНЫЕ УСЛОВИЯ ПРИМЕНЕНИЯ

5.1. Знак Х, стоящий после Ех-маркировки, означает, что при эксплуатации трансмиттера HMT360 необходимо соблюдать следующие специальные условия:

1. Электропитание должно осуществляться через барьеры искрозащиты, предназначенные для эксплуатации в зонах со взрывоопасной газовой смесью категории IIC и имеющие сертификат соответствия требованиям ТР ТС 012/2011.

2. Необходимо принять меры, исключающие накопление электростатического заряда на ЖК-дисплее.

3. Необходимо избегать трений и ударов по корпусу.

5.2. При эксплуатации датчиков HMP361, HMP362, HMP363, HMP364, HMP365, HMP367, HMP368 необходимо соблюдать следующие специальные условия:

1. Подключать датчики только к трансмиттеру HMT360 и использовать только после подключения.

2. При эксплуатации необходимо принять меры, исключающие накопление электростатического заряда на кабеле датчика

Специальные условия применения, обозначенные знаком Х, должны быть отражены в сопроводительной документации, подлежащей обязательной поставке в комплекте с каждым устройством.

Внесение изменений в конструкцию изделий возможно только по согласованию с НАНИО ЦСВЭ.

Инспекционный контроль – 2018 г., 2020 г.



Руководитель (уполномоченное  
лицо) органа по сертификации

Эксперт (эксперт-аудитор)  
(эксперты (эксперты-аудиторы))

*Коган*  
(подпись)

*Венцев*  
(подпись)

А.А. Коган  
(инициалы, фамилия)

В.Б. Солнцев  
(инициалы, фамилия)