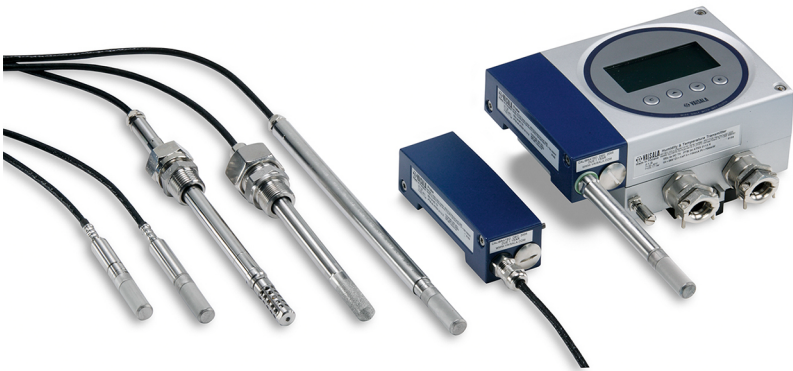


# Safety Guide

Vaisala Transmitter Series

**HMT360**



PUBLISHED BY

Vaisala Oyj  
Vanha Nurmijärventie 21, FI-01670 Vantaa, Finland  
P.O. Box 26, FI-00421 Helsinki, Finland  
+358 9 8949 1

Visit our Internet pages at [www.vaisala.com](http://www.vaisala.com).

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# HMT360 installation in hazardous locations



**WARNING!** Protected installation is mandatory in a hazardous environment.

In hazardous environments, always connect the transmitters via galvanic isolators or Zener barriers. A galvanic isolator or Zener barrier must also be used when the transmitter body is in a safe area, but the probe is installed in a hazardous environment. Examples of protected installations are provided on the next page. Also read the *HMT360 User Guide* (M010056EN) before starting the installation.

The transmitter does not include a galvanic isolator or a Zener barrier. They can be ordered as optional accessories from Vaisala.

## 2-wire connection

Connect the unpowered power supply wires to the connectors: Ch 1 (humidity) and Ch 2 (temperature). Both channels require an own power supply. As Ch 1 is a main output, the transmitter does not operate if only Ch 2 is connected (Ch 2 is optoisolated from transmitter electronics).

## Special conditions for safe use under IECEx

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 to 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  $-40\text{ °C} \dots +60\text{ °C}$  for the transmitter.
5. For the probe types HMP362, HMP364, HMP365, HMP367, and HMP368 the allowed ambient temperature range is  $-70\text{ °C} \dots +120\text{ °C}$  for the temperature class T4 and the allowed ambient temperature range is  $-70\text{ °C} \dots +180\text{ °C}$  for the temperature class T3.
6. For the probe type HMP361 the allowed ambient temperature range is  $-40\text{ °C} \dots +60\text{ °C}$  and the temperature class is T4.
7. For the probe type HMP363 the allowed ambient temperature range is  $-40\text{ °C} \dots +120\text{ °C}$  and the temperature class is T4.

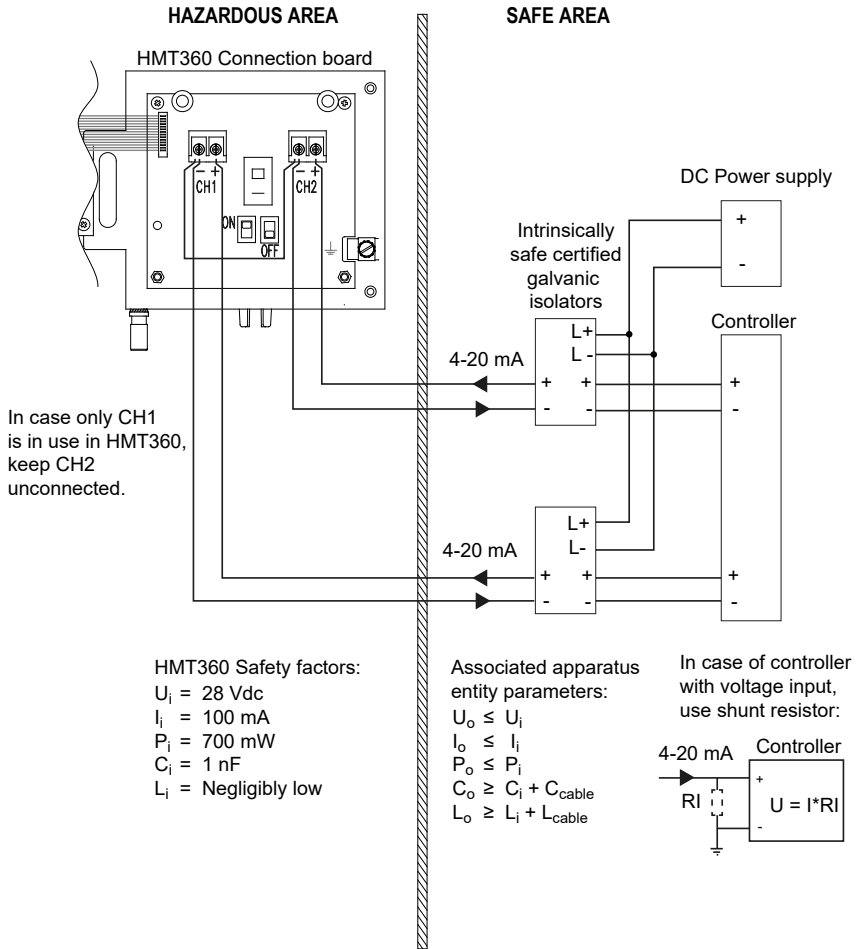


Figure 1 HMT360 connected to a galvanic isolator



**CAUTION!** If both analog outputs are in use with a galvanic isolator, Ch 1 (-) and Ch 2 (-) must be short circuited.

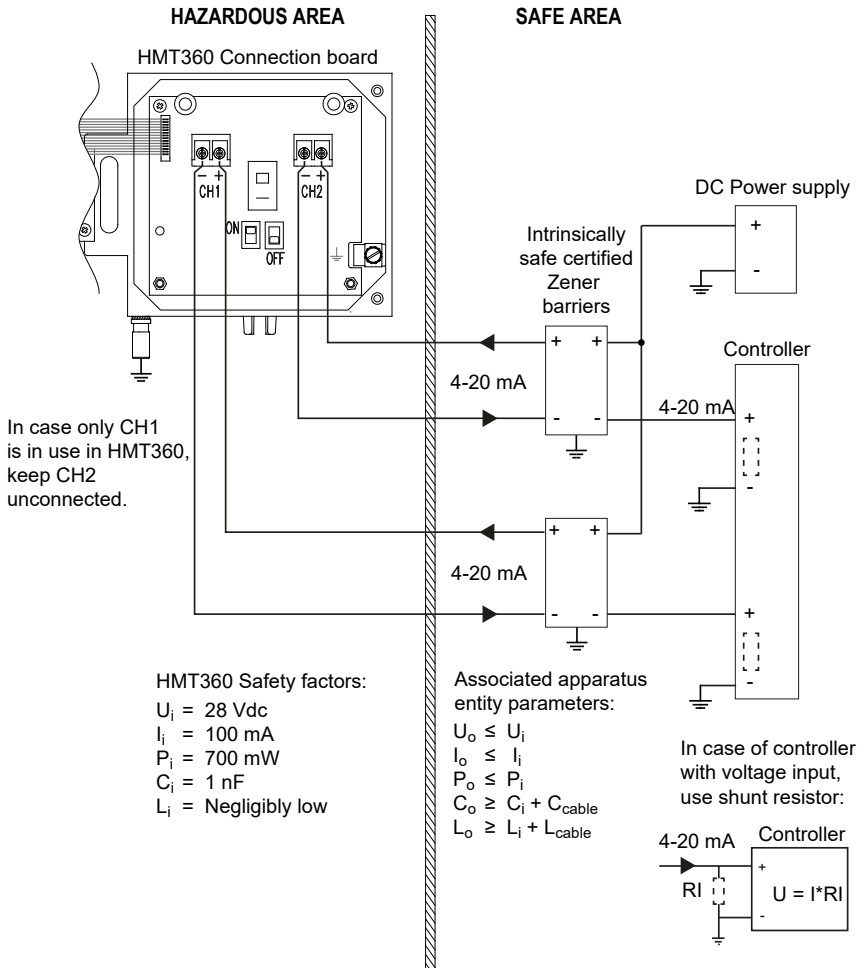


Figure 2 HMT360 connected to a Zener barrier

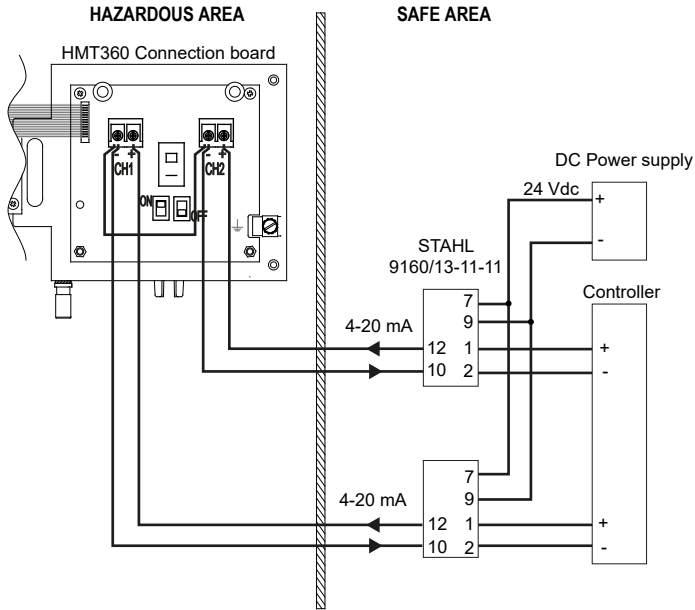


Figure 3 Example connection to STAHL 9160/13-11-11 galvanic isolator

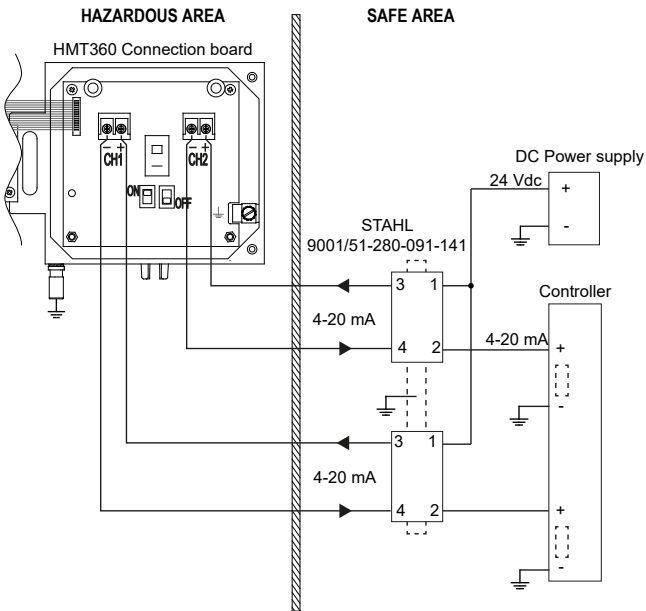


Figure 4 Example connection to STAHL 9001/51-280-091-141 (Zener barrier)

# Certification documents

## VTT IECEX Certificates

		<b>IECEX Certificate of Conformity</b>	
<b>INTERNATIONAL ELECTROTECHNICAL COMMISSION</b> <b>IEC Certification Scheme for Explosive Atmospheres</b> <small>for rules and details of the IECEX Scheme visit <a href="http://www.iecex.com">www.iecex.com</a></small>			
Certificate No.:	IECEX VTT 09.0002X	Issue No: 3	<b>Certificate history:</b> <small>Issue No. 3 (2015-05-29) Issue No. 2 (2011-04-06) Issue No. 1 (2009-08-26) Issue No. 0 (2009-06-10)</small>
Status:	<b>Current</b>	Page 1 of 4	
Date of issue:	<b>2015-05-29</b>		
Applicant:	<b>Vaisala Oyj</b> Vanha Nummijärventie 21 FI-01670 Vantaa Finland		
Electrical Apparatus:	<b>Humidity and temperature transmitter type HMT360</b>		
Optional accessory:			
Type of Protection:	<b>Intrinsic safety</b>		
Marking:	<b>Ex ia IIC T4 Ga</b>		
Approved for issue on behalf of the IECEX Certification Body:		Jenni Hirvelä	
Position:		Expert	
Signature: (for printed version)			
Date:		<u>2015-05-29</u>	
<p>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 <a href="http://Official IECEX Website">Official IECEX Website</a>.</p>			
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: **Valisala 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\VT:ExTR39\\_3002403](#)

##### Quality Assessment Report:

[FI\VT:CAR09\\_0001503](#)





# 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 350, 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: **Vaisala Oyj**  
Vanhä Nurmijärventie 21  
FI-01670 Vantaa  
Finland  
**Finland**

Electrical Apparatus: **Humidity and Temperature transmitter type HMT 360**  
Optional accessory:

Type of Protection: **Ex ta**

Marking: **Ex ta IIIC T<sub>500</sub> 80 °C Da**

Approved for issue on behalf of the IECEx Certification Body: **Tiina Ala-Ouisinen**

Position: **Manager, Services**

Signature:  
(for printed version)

Date:

1.2.2013

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.

Certificate issued by:

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

**VTT EXPERT SERVICES LTD**



# 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 Nummijärventie 21  
FI-01570 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 prod 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 Document as amended.

#### STANDARDS:

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

IEC 60079-0 : 2011 Explosive atmospheres - Part 0: General requirements  
Edition: 6.0  
IEC 60079-31 : 2008 Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'  
Edition: 1

*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/EXTR12.001/0/00

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 25906ZZ 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.

# FM Certificate of Compliance



FM Approvals  
 1151 Boston Providence Turnpike  
 P.O. Box 9102 Norwood, MA 02062 USA  
 T: 781 762 4300 F: 781-762-9375 www.fmapprovals.com

## CERTIFICATE OF COMPLIANCE

### HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

**HMT360abcdehijklm. 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 / I,II,III / 2 / FG / T5 Ta = 60°C

Entity Parameters:

	$V_{Max}$ (V)	$I_{Max}$ (mA)	$P_{Max}$ (W)	$C_i$ (nF)	$L_i$ ( $\mu$ H)
<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.

To verify the availability of the Approved product, please refer to [www.approvalguide.com](http://www.approvalguide.com)

FM Approvals HLC 5113

0003010615

Page 1 of 2



**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

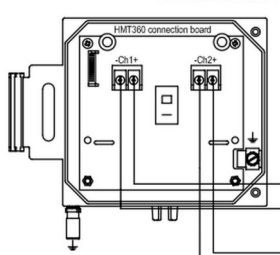
To verify the availability of the Approved product, please refer to [www.approvalguide.com](http://www.approvalguide.com)  
FM Approvals HLC 5/13 0003010615  
Page 2 of 2

3	2	1
REV	QTY	DESCRIPTION / INFO / ECO No.
B		List of approved probe types added
DESIGN	CHECKED / Reviewed	ACCEPTED / Approved
	ECO212870	RHA

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

HAZARDOUS AREA



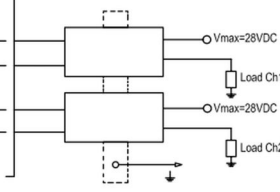
HMT360 transmitter series has following approved probe options:  
HMP361, HMP362, HMP363, HMP364, HMP365, HMP367 & HMP368

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:  $V_{max}=28V$ ,  $I_{max}=100mA$ ,  $C_i=1nF$ ,  $L_i=0$ ,  $P_i=0.7W$


SAFE AREA

Use FM approved associated apparatus; zener barriers or galvanic separators with entity concept parameters:  
 $V_{oc} < 28V$   
 $I_{sc} < 100mA$   
 $C_a > C_i + C_{cable}$   
 $L_a > L_i + L_{cable}$



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

General tolerance	ISO 2768-m								
Material	Weight	Design	Supplier code						
Finish		DOCUMENT CREATION DATA	Title						
		YYYY-MM-DD	INITIALS	Assembly Instruction					
		Creator	01-07-18	ARH	HMP360 and HMT360				
		Review	01-11-19	ARH	VIN/HM				
FIRST ANGLE PROJECTION	DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE SPECIFIED	Approved	05-04-11	RHA	Size	Code	DRW211603		
		Active ID	ACAD		Scale	Sheet of			
3	2	1							

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# CSA Certificate of Compliance



## 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

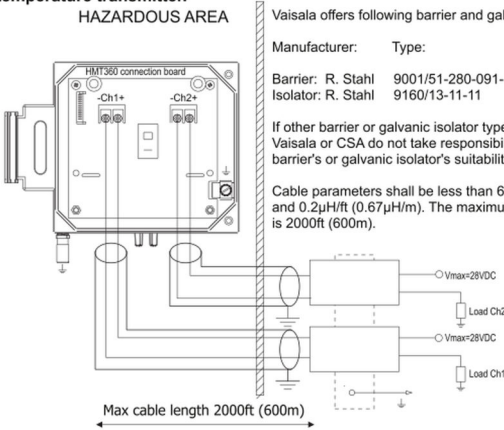

**Project:** 2759392

**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 ....

Ln	Qty	Change	Revisy/ ECO no	Design	Date Revise	Date Appr
C		Probe types and barrier/isolator info updated	ECO212844	KKe	2006-06-20 RHA	2006-06-20 HJJ
<p><b>Wiring diagram for intrinsically safe operation of the HMT360-series humidity and temperature transmitter.</b></p> <p style="text-align: center;"><b>HAZARDOUS AREA</b></p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  </div> <div style="width: 50%;"> <p>Vaisala offers following barrier and galvanic isolator types:</p> <p>Manufacturer:      Type:      Vaisala code:</p> <p>Barrier: R. Stahl    9001/51-280-091-141    210664</p> <p>Isolator: R. Stahl    9160/13-11-11            212483</p> <p>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!</p> <p>Cable parameters shall be less than 60pF/ft (197pF/m) and 0.2µH/ft (0.67µH/m). The maximum cable length is 2000ft (600m).</p> </div> </div> <p style="text-align: right;"><b>SAFE AREA</b></p> <p>Max cable length 2000ft (600m)</p>						
<p>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.</p> <p><b>NOTE:</b></p> <ol style="list-style-type: none"> <li>Each channel must be supplied through separate shielded cables.</li> <li>When using galvanic separators CH1- and CH2- must be short circuited with an external wire.</li> <li>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.</li> <li>Use only conduit connection in Division 2.</li> <li>Substitution on components may impair intrinsic safety or suitability for Division 2.</li> <li>Only intrinsically safe installation is allowed in Class II and Class III environments.</li> <li>Intrinsically safe barrier ground must be less than 1 ohm.</li> <li>Maximum safe area voltage is 250V.</li> </ol> <p>HMT360-series transmitters shall be used with following probes:</p> <p>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</p> <p>The material for associated cable is FEP (Tetrafluoropropylene) or for HMP363 also PUR (Polyurethane) available.</p> <p>To avoid static discharge shall the cable cover with conductive material.</p>						
Drawn	KKe 2002-08-21	Auth		Serial no.	Steel	Cooper's & Inc. no.
Revised	IML 2002-10-06	Title	<b>Installation Drawing</b>		Vaisala Oyj Vanhanurmijärventie 21	
Appr	KKe 2002-10-06	Size				
Design					Doc no	DRW213478
Revisions	DRW213478B				Rev	C
Replaces						

# TIIS Certificate of Conformity



## 防爆構造電気機械器具型式検定合格証

申請者	東京都千代田区神田神保町一丁目105番地 東京都新宿区神楽坂6丁目4番地 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 (i a)	
対象ガス又は蒸気の 爆発等級及び発火度	IICT4	
規格	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	
	平成27年 9月12日 から 平成30年 9月11日まで	
	平成30年 9月12日 から 平成33年 9月11日まで	
	平成 年 月 日 から 平成 年 月 日まで	

更新時  
一部変更

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

記載事項変更  
平成30年9月14日

型式検定実施者 公益社団法人 産業安全技術協会長



# PCEC Conformity Certificates



## 防爆合格证

CONFORMITY CERTIFICATE OF EXPLOSION-PROOF

证号 CB19.2619  
Certificate No.

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

HMT3601

Ex ia II C T4 Ga

/

HM27175, HM27178

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:  
HMT3603, HMT3604, HMT3605, HMT3607, HMT3608。
4. 制造商: Vaisala Oyj。
5. 制造商地址: Vanha Nurmijärventie21, 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  
GB 3836.1-2010 GB 3836.4-2010

发给: 维萨拉(北京)测量技术有限公司

本证失效日期: 2024-09-23

Date of Expire:

发证日期: 2019-09-23

Date of Issue:

中心印章  
Center seal



中心主任  
Director

刘红光

国家防爆产品质量监督检验中心(天津)  
(石油和化学工业电气产品防爆质量监督检验中心)  
National Ex-Product Quality Supervision and Inspection Center(TianJin)

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: 中国天津市丁字沽二号路 85 号  
Center Add: No 85 No.3 Road DingZiGu Tianjin China Post code: 300131

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http://www.pcec.com.cn



# 防 爆 合 格 证

CONFORMITY CERTIFICATE OF EXPLOSION-PROOF

证 号      CE19.5570X  
Certificate No.

产品名称 Name of Product	温湿度/露点变送器
型号及规格 Type of Product	HMT3601, HMT3603, HMT3604, HMT3605, HMT3607, HMT3608
防爆标志 Marking	Ex tD A20 IP6X T80°C
技术文件 Technical Documents	/
图 号 Drawing No.	HM27175, HM27178
备 注 Note (s)	本证书备注内容详见附录

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  
GB 12476.1-2013    GB 12476.5-2013

发 给: 维萨拉(北京)测量技术有限公司  
Issued to

本证失效日期: 2024-09-18

Date of Expire:

发 证 日 期: 2019-09-18

Date of Issue:

中心印章  
Center seal



中心主任  
Director

刘红光

国家防爆产品质量监督检验中心(天津)  
(石油和化学工业电气产品防爆质量监督检验中心)  
National Ex-Product Quality Supervision and Inspection Center(TianJin)

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: pccc@pccc.com.cn

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Tel/ Fax: 022-26651066/26689116

http://www.pccc.com.cn



# 防爆合格证附录

ANNEX OF CONFORMITY CERTIFICATE OF EXPLOSION-PROOF

证号 CE19.5570X  
Certificate No.

1. 电气参数:  $U_i=28V$ ,  $I_i=100mA$ ,  $P_i=700mW$ ,  $C_i=1nF$ ,  $L_i$  忽略不计。
  2. 环境温度:  $-40^{\circ}C \leq T_a \leq +60^{\circ}C$ 。
  3. HMT360 系列温湿度/露点变送器应安装不锈钢保护罩防止冲击。
  4. HMT360 系列温湿度/露点变送器必须由适当的本安关联设备供电以满足输入值的要求。
  5. 须装配与此产品防爆等级适用的并取得防爆合格证的引入装置。未使用的电缆引入口须用此产品防爆等级适用的并取得防爆合格证的封堵件封堵。
  6. 制造商: 芬兰维萨拉责任有限公司 (Vaisala Oyi); 制造商地址 Vanha Nurmiarventie 21, FI-01670 Vantaa, Finland
- 以下空白



国家防爆产品质量监督检验中心 (天津)  
(石油和化学工业电气产品防爆质量监督检验中心)  
National Ex-Product Quality Supervision and Inspection Center(TianJin)

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: 中国天津南丁字路三号路 85 号

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http://www.pcec.com.cn

제 2017-BO-0419 호



(앞쪽)

# 안전인증서

Vaisala Oyj

Vanha Nurmijarventie 21, FI-01670 Vantaa, Finland

위 사업장에서 제조하는 아래의 품목이 산업안전보건법 제34조 및 같은 법 시행규칙 제58조의4제4항에 따른 안전인증 심사 결과 안전·보건 기준에 적합하므로 안전인증표시의 사용을 인증합니다.

### 품 목

방폭구조 전기기계·기구(Humidity and Temperature Transmitter)

### 형식·모델/용량·등급/인증번호

형식·모델  
HMT360\*

인증번호  
17-AV4BO-0419X

용량·등급

Ex ia IIC T4  
Ui = 28V, Ii = 100mA, Pi = 700mW  
Ci = 1nF, Li = negligibly low

### 인증기준

방호장치 안전인증 고시(고용노동부고시 제2016-54호)

### 인증조건

(뒤쪽)참조

2017년 09월 05일

한국산업안전보건공단 이사장







(뒤 쪽)

## 인 증 조 건

1. 제조공장 : 'Vaisala Oyj, Vanha Nurmijärventie 21, FI-01670 Vantaa, Finland' 에서 생산하는 제품에 한함

2. 제품개요

본 방폭 Humidity and Temperature Transmitter는 본질안전 방폭구조로 제작되었으며, 사용 주위온도 및 Temperature class에 따른 프로브 타입이 있음

3. 인증범위: 본 기기의 동일행시 범위는 아래 표와 같음

H	M	T	3	6	0	*
- Probe type -						
1 벽부착용 프로브						
3 협소공간용 프로브						
4 압력용 프로브						
5 고온용 프로브						
7 고습도용 프로브						
8 압력관 또는 압력유체용 프로브						

※ 그 외 문자열은 옵션

4. 안전한 사용을 위한 조건

- 1) Sensor head 케이블 약세서리 또는 투시창이 있는 기기는 정전기로 인한 점화위험이 없는 가스그룹 IIC 0중 장소에서만 사용가능함
- 2) 충격 및 마찰에 의한 스파크가 발생하지 않는 0중 장소에 설치해야함
- 3) 직렬 인터페이스는 폭발위험지역 바깥에서만 사용하여야 하며, 직렬 인터페이스 관련 케이블 25905ZZ를 사용하여야 함
- 4) 주위온도
  - Transmitter Ambient temperature

Transmitter	Ambient temperature range
	$-40^{\circ}\text{C} \leq \text{Ta} \leq +60^{\circ}\text{C}$

- Probe type Ambient temperature

Probe	Ambient temperature	
	Temperature Class T4	Temperature Class T3
1	$-40^{\circ}\text{C} \leq \text{Ta} \leq +60^{\circ}\text{C}$	-
3	$-40^{\circ}\text{C} \leq \text{Ta} \leq +120^{\circ}\text{C}$	-
4	$-70^{\circ}\text{C} \leq \text{Ta} \leq +120^{\circ}\text{C}$	$-70^{\circ}\text{C} \leq \text{Ta} \leq +180^{\circ}\text{C}$
5	$-70^{\circ}\text{C} \leq \text{Ta} \leq +120^{\circ}\text{C}$	$-70^{\circ}\text{C} \leq \text{Ta} \leq +180^{\circ}\text{C}$
7	$-70^{\circ}\text{C} \leq \text{Ta} \leq +120^{\circ}\text{C}$	$-70^{\circ}\text{C} \leq \text{Ta} \leq +180^{\circ}\text{C}$
8	$-70^{\circ}\text{C} \leq \text{Ta} \leq +120^{\circ}\text{C}$	$-70^{\circ}\text{C} \leq \text{Ta} \leq +180^{\circ}\text{C}$

5. 인증(변경)사항

- 해당 없음

6. 그 밖의 사항

- 안전인증품의 품질관리, 확인심사 수검, 변경사항 신고 등 인증 받은자의 의무사항을 준수 할 것

**VAISALA**

[www.vaisala.com](http://www.vaisala.com)

