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

Certificate No.:	IECEx LCIE 14.0003X issue No.:1	Certificate history: Issue No. 1 (2014-8-12) Issue No. 0 (2014-5-27)
Status:	**Current**	
Date of Issue:	**2014-08-12**	Page 1 of 4

Applicant:

MINCO Products
7300 Commerce Lane North
Minneapolis, MN 55432
United States of America

Electrical Apparatus: **Temperature sensor type S211596abcd and S211597abcd**
Optional accessory:

Type of Protection: **ia**

Marking: Ex ia IIC T6...T2 Ga
IECEx LCIE 14.0003 X
(see clause equipment for complet marking)

Approved for issue on behalf of the IECEx Certification Body: Remy Hanot

Position: Certification Officer

Signature:
(for printed version)

Date: 13 Août 2014.

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:

Laboratoire Central des Industries Electriques (LCIE)
33 Avenue du General Leclerc
FR-92260 Fontenay-aux-Roses
France

Documents relative to LCIE certification activites (Certificates, QARs, ExTRs) can be registered under the references "LCI" or "LCIE".

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Date of Issue: **2014-08-12** Issue No.: **1**

Manufacturer:

MINCO Products
7300 Commerce Lane North
Minneapolis, MN 55432
United States of America

Additional Manufacturing location (s):

MINCO SAS
Zone Industrielle
09310 ASTON
France

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 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

*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:
FR/LCIE/ExTR14.0006/00 FR/LCIE/ExTR14.0006/01

Quality Assessment Report:

FR/LCIE/QAR12.0001/00 NL/DEK/QAR12.0028/00 NL/DEK/QAR12.0028/01

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Schedule

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

The equipment consists of a sensor element with permanently connected cable.
Designation of the model : see attachment
Marking :
MINCO Address : ...
Type : S211596abcd or S211597abcd (1)
Serial number : ... Year of construction : ...
Ex ia IIC T6...T2 Ga (2) IECEx LCIE 14.0003 X
Ui ≤ 28V, Ii ≤ 30mA, Pi ≤ 0.1W, Ci ≤ 100pF/m, Li ≤ 2µH/m
(1)completed with the model
(2)see the temperature classification table in attachment
Electrical parameters :
Ui ≤ 28V, Ii ≤ 30mA, Pi ≤ 0.1W, Ci ≤ 100pF/m, Li ≤ 2µH/m

CONDITIONS OF CERTIFICATION: YES as shown below:

The apparatus must be only connected to a certified intrinsically safe apparatus. This combination must be compatible as regards intrinsic safety rules (see electrical parameters).
Temperature classification : depending on the temperature of use, the type of sensing element and temperature classification : see attachment.

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

Issue 1 : correction of two mistakes.
Page 1 : type S211597abcd instead S511597abcd
Attachment : page 1, table 1, element code : PD instead PC

Annex: LCIE 14.0003X-Issue 01-attachment 01.pdf

IECEx LCIE 14.0003 X issue 01
Attachment n°01

Designation of the model :

- Model S211596abcd :

a : sensing elements (see table 1 for additional element options):
PA = platinium (single element model)
PAPA = platinium (dual element model)
(dual element not available in copper)
b : number of leads (see table 2 for lead gauge)
2 = 2 leads per element (not available on CA and PD models)
3 = 3 leads per element
4 = 4 leads per element
c : leadwire covering :
T = TFE insulated leads only
S = stainless steel braid over TFE insulated leads
F = FEP over TFE insulated leads
R = FEP over stainless steel braid
E = FEP over stainless steel braid with elastomer fill (max elastomer fill length : 144")
d : lead length in inches (see drawing)

- Model S211597abcd :

a : sensing elements (see table 1 for additional element options):
PA = platinium (single element model)
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Table 1 :

Element code	Element type	Resitance for each element
CA	Copper	10.00Ω ± 0.2%
NA	Nickel	120.0Ω ± 0.5%
PA	Platinium	100.0Ω ± 0.36%
PE	Platinium	100.00Ω ± 0.36%
PD	Platinium	100.00Ω ± 0.12%
PM	Platinium	100.00Ω ± 0.06%
PF	Platinium	1000.0Ω ± 0.12%

Table 2 :

	Number of leads per element	Lead gauge	Excluded leawire resistance (ohms/lead/foot)
Single element model	2	24	0.025
	3	24	0.025
	4	24	0.025
Dual element model	2	24	0.025
	3	24	0.025
	4	28	0.064

Temperature classification :

Depending on the temperature of use, the type of sensing element and temperature classification, the maximum power applied to the sensor temperature must not exceed the following values:

Simple element 100Ω, 120Ω and 1000Ω :

P (mW)	T6	T5	T4	T3	T2
	Ambiante temperature maximale (°C)				
20	80	95	130	195	200
40	75	90	125	190	200
50	70	85	120	195	200
100	65	80	115	180	200

Dual element 100Ω, 120Ω and 1000Ω :

P (mW)	T6	T5	T4	T3	T2
	Ambiante temperature maximale (°C)				
20	75	90	125	190	200
40	65	80	115	180	200
50	60	75	110	175	200
100	55	70	105	170	200

Simple element 10Ω :

P (mW)	T6	T5	T4	T3	T2
	Ambiante temperature maximale (°C)				
10	75	90	125	190	200
20	75	90	125	190	200
30	75	90	125	190	200
40	75	90	125	190	200
50	70	85	120	185	200