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 14.0057X issue No.:0

Certificate history:

Status: **Current**

Date of Issue: **2015-04-14**

Applicant: **MINCO SAS**
Zone industrielle
09310 ASTON
France

Electrical Apparatus: **Temperature sensor - Type S... or TC...**
Optional accessory:

Type of Protection: **Ex ia, Ex e**

Marking: Ex ia IIC T6…T2 Ga or Ex ia IIC T6 … T2
Ex e IIC T6…T2 Gb or Ex eb IIC T6…T2
(Refer to full marking in attachment)

Approved for issue on behalf of the IECEx Certification Body: Certification Officer

Position: Julien Gauthier

Signature:
(for printed version)

Date: 2015-04-14

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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Certificate No.: IECEx LCIE 14.0057X

Date of Issue: **2015-04-14** Issue No.: **0**

Manufacturer: **MINCO SAS**
Zone industrielle
09310 ASTON
France

Additional Manufacturing location (s):
MINCO PRODUCTS
7300 Commerce Lane North
Mineapolis, MN 55432
United States of America

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"
IEC 60079-7 : 2006-07 Edition: 4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

*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/ExTR14.0064/00

Quality Assessment Report:

FR/LCIE/QAR12.0001/03 FR/LCIE/QAR12.0001/04

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Schedule

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

The equipment is a temperature sensor device composed of 1 or 2 measuring elements fixed on a cable.

The sensor element can be either resistive (5 materials can be used) or thermocouple.
The length of the cable is defined depending to the need of the installation.
The sensors can be used in zone 0, zone 1 or zone 2. They can also be placed in an explosion proof enclosure.

Optionally the cables can be equipped of sealed cylinders fixed on the cable. They can be used to realize enclosure bushing.
The cylinders exist for various length.

CONDITIONS OF CERTIFICATION: YES as shown below:

- Ambient temperature (connecting parts) :
  -20℃ up to +125℃
- Process temperature (sensor location) :
Thermocouple: -184℃ up to +200℃
Resistive: -50℃ up to +200℃
Limitation, with Feedthrough:
-20℃ up to +149℃
Limitation with elastomer filled cable : +125℃

- Use of product in low vibration environment.

- For installation the user shall ensure that the ambient temperature of connective parts is respected. It shall not be impacted by measured temperature.

Routine tests (not applicable for grounded thermocouple TC) :

- Each increased safety mode of protection apparatus shall be submitted to a dielectric strength test at 500VAC, 50/60Hz during 60 seconds without breakdown (according to §7.1 of IEC 60079-7 standard).

Annex: IECEx LCIE 14.0057X-Issue00-Attachment 01-MINCO.pdf

Full Ex marking :

MINCO SAS
Address : …..
Type : S or TC
Model : ……..
Batch number : …..
Year of construction : …..

Intrinsic safety :
Ex ia IIC T6…T2 Ga or Ex ia IIC T6 … T2
IECEx LCIE 14.0057 X
U_i : 30V ; P_i : 0.1 up to 0.4W

Increased safety:
Ex e IIC T6…T2 Gb or Ex eb IIC T6…T2
IECEx LCIE 14.0057 X
U : 30V ; P : 0.1 up to 0.4W

Sensor type	Sensor electrical power	Class T6	Class T5	Class T4	Class T3	Class T2
Thermocouple or resistive	0.1 W	70°C	85°C	120°C	185°C	200°C
resistive	0.2 W	65°C	80°C	115°C	180°C	200°C
resistive	0.4 W	50°C	65°C	100°C	165°C	200°C

Type detail :

Resistive sensors are type S… :

Spécification du numéro de plan / *Specification drawing number*	Elément sensible / *Sensing element*	Longueur de la côte A / *Case length A*	Nombre de fils / *Number of leads*	Revêtement du fil / *Lead wire covering*	Epaisseur de l'extrêmité Babbitt / *Babbitt tip thickness*
S102900 up to S102902	CA CACA	28 up to 480 (inches)	X : 2	A	B0
S102905 up to S102907	NA NANA		Y : 3	E	B1
S102920 up to S102923	PE PEPE		Z : 4	F	B2
S102930 and S102931	PA PAPA			G	AC1
S102936 and S102935	PD PDPD			S	AC2
S102950 up to S102954	PF PFPF			T	AC3
S102970 up to S102974	PM PMPM			Ø	Ø
	PW PWPW				

Thermocouple sensors are type TC…

Spécification du numéro de plan / *Specification drawing number*	Elément sensible / *Sensing element*	Jonction / *Junction*	Longueur de la côte A / *Case length A*	Revêtement du fil / *Lead wire covering*	Epaisseur de l'extrêmité Babbitt / *Babbitt tip thickness*
TC102910 up to TC102912	E	U	25 up to 480 (inches)	A	B0
TC102915	J	G		G	B1
TC102917	K			S	B2
TC102960 up to TC102964	T			T	AC1
	EE			Ø	AC2
	JJ				AC3
	KK				Ø
	TT				