



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 DEK 12.0057U issue No.:0 Certificate history:

Status: **Current**

Date of Issue: **2012-12-07** Page 1 of 4

Applicant: **Minco Products Inc.**
7300 Commerce lane NE,
Minneapolis, MN 55432
United States of America

Electrical Apparatus: **Resistance Temperature Detector for Stator Windings**
Optional accessory:

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

Marking: **Ex e IIC Gb**
Ex ia IIC Ga

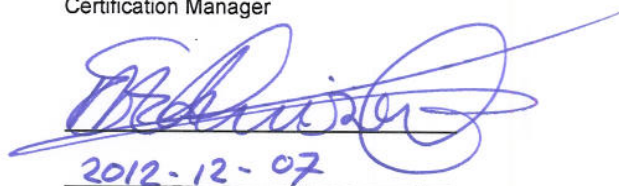
*Approved for issue on behalf of the IECEx
Certification Body:*

M. Erdhuizen

Position:

Certification Manager

*Signature:
(for printed version)*



2012-12-07

Date:

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:

DEKRA Certification B.V.
Utrechtseweg 310
6812 AR Arnhem
The Netherlands

All testing, inspection, auditing and certification activities of the former KEMA Quality are an integral part of the DEKRA Certification Group.





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Manufacturer: **Minco products Inc.**
7300 commerce Lane NE
Minneapolis, MN 55432
United States of America

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

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

*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:

[NL/DEK/ExTR12.0059/00](#)

Quality Assessment Report:

[NL/DEK/QAR12.0028/01](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Description

The Resistance Temperature Detectors (RTDs) for Stator Windings, Types S100050 ... - S100055 ..., S200050 ... - S200055 ..., S207977..., MS .. 200, MS .. 251, MS .. 302, MS .. 353, MS .. 404, MS .. 455, TS102052 and S102040 are intended to be built into the stator slots of rotating electrical machines. Versions for 2-, 3- or 4-wire measurement circuits are available. Operating temperature range -50 °C to +180 °C (-58 °F to 356 °F).

Electrical data

For use in type of protection increased safety Ex e IIC:

Measuring current max. 10 mA

Power max. 1.5 W

In type of protection intrinsic safety Ex ia IIC, with following maximum values:

$U_i = 20$ V; $P_i = 170$ mW; $C_i = 84$ pF; $L_i = 4$ μ H (including cable with a length of 3 m).

CONDITIONS OF CERTIFICATION: NO

Empty box for conditions of certification.



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EQUIPMENT(continued):

Thermal data

When used in type of protection intrinsic safety Ex ia IIC, the relation between maximum ambient temperature T_{Amax} and the maximum input power P_i is shown in the following table:

P_i	T_{Amax} for Temperature class T6	T_{Amax} for Temperature class T5	T_{Amax} for Temperature class T4	T_{Amax} for Temperature class T3
10 mW	78 °C	93 °C	128 °C	180 °C
50 mW	70 °C	85 °C	120 °C	180 °C
100 mW	60 °C	75 °C	110 °C	175 °C
170 mW	45 °C	60 °C	95 °C	160 °C

The instructions provided with the equipment shall be followed in detail to assure safe operation.
For suitable mounting of the Resistance Temperature Detectors the installation requirements shall be observed, especially regarding the possible markings and the fixed cable isolation.