



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 15.0031X

Issue No: 1

Certificate history:

Status: **Current**

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Issue No. 1 (2017-04-27)

Issue No. 0 (2016-02-25)

Date of Issue: **2017-04-27**

Applicant: **SOFRASER**
15 rue Nobel
45700 VILLEMANDEUR
France

Equipment: **Viscometer - Type: MVI-SI**
Optional accessory:

Type of Protection: **Ex ia**

Marking:
Ex ia IIC T6...T1 Ga
(Refer to Schedule for full marking)

Approved for issue on behalf of the IECEx
Certification Body:

Rémi HANOT

Position:

Certification Officer

Signature:
(for printed version)

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:

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





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Manufacturer: **SOFRASER**
15 rue Nobel
45700 VILLEMAMDEUR
France

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:

FR/LCIE/ExTR15.0031/00

FR/LCIE/ExTR17.0022/00

Quality Assessment Report:

FR/LCIE/QAR14.0012/01



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The equipment is composed mainly of a vibrating rod, two coils and an optional Pt100 sensor mounted inside a stainless steel housing. It is equipped with a cable which is linked to an external intrinsically safe certified power source. The equipment is available in two versions (with or without Pt sensor): 200°C version et 300°C version.

Electrical parameters:

Driving coil or Receiving coil (cable excluded): U_i : 22.4 V ; I_i : 11.79 mA ; P_i : 66 mW ; C_i : 0 μ F ; L_i : 250 mH

Pt100 (cable excluded): U_i : 4 V ; I_i : 200 mA ; P_i : 190 mW ; C_i : 0 μ F ; L_i : 0 mH

Associated cable parameters: C_{cable} = 100 pF/m ; L_{cable} = 2 μ H/m

Full marking:

SOFRASER

Address: ...

Type: MIVI-SI

Serial number: ...

Year of construction: ...

Ex ia IIC T6...T1 Ga (1)

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U_i : ... ; I_i : ... ; P_i : ... ; C_i : ... ; L_i : ... (2)

C_{cable} = 100 pF/m ; L_{cable} = 2 μ H/m

(1): see Specific conditions of use for temperature class.

(2): completed by electrical parameters

Technical manual ref. 379/1

SPECIFIC CONDITIONS OF USE: YES as shown below:

a) The equipment can be only connected to intrinsically safe certified associate equipment. These combinations must be compatible as regards with the intrinsic safety rules (see electrical parameters).

b) Ambient temperature range:

- Sensor body: -40°C to +200°C (200°C version) or -40°C to +300°C (300°C version)

- Cable: -40°C to +100°C

c) Cable length must be defined in such a way that total capacitance of sensor and cable does not exceed the maximum permitted capacitance of certified power supply.

d) To avoid the effects of process temperature and other thermal effects, care shall be taken to ensure that the temperature at sensor body and cable parts does not exceed assigned ambient temperature range.



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EQUIPMENT (continued):

SPECIFIC CONDITIONS OF USE (continued):

e) Temperature class depends on ambient temperature as follows:

Temperature class	Ambient temperature (T _{amb})	
	With Pt100 sensor	Without Pt100 sensor
T6	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +35^{\circ}\text{C}$	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +65^{\circ}\text{C}$
T5	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +50^{\circ}\text{C}$	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +80^{\circ}\text{C}$
T4	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +85^{\circ}\text{C}$	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +115^{\circ}\text{C}$
T3	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +150^{\circ}\text{C}$	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +180^{\circ}\text{C}$
T2	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +245^{\circ}\text{C}$	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +275^{\circ}\text{C}$
T1	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +300^{\circ}\text{C}$	$-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +300^{\circ}\text{C}$



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

Issue 00 (2016/02/25):

Conformity assessment according to IEC 60079-0:2011 and IEC 60079-11:2011 standards.

Issue 01: Change of intrinsic safety parameters.