IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx CSA 25.0042X**

Certificate history:

Status: **Current**

Issue No: 0

Date of Issue: 2025-06-02

Applicant: **Ashcroft Instruments GmbH**
Max-Planck-Straße 1-9
Alsdorf 52477
Germany

Equipment: **Electrical Thermometer / Thermocouples (S80) and RTD (S81)**

Optional accessory:

Type of Protection: **Increased Safety "eb" & Dust Protection by Enclosure "tb"**

Marking: Ex eb IIC T6…T1 Gb
Ex tb IIIC T85°C…T155°C Db

Ambient range - Refer to Table in Conditions Of Manufacture

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

Position: **Senior Director of Operations**

Signature:
(for printed version)

Date:
(for printed version)

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 www.iecex.com or use of this QR Code.

Certificate issued by:

CSA Group
178 Rexdale Boulevard
Toronto, Ontario M9W IR3
Canada

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Manufacturer: **Ashcroft Instruments GmbH**
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Manufacturing locations: **Ashcroft Instruments GmbH**
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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 equipment 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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-31:2022 Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
Edition:3.0

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with 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:

CA/CSA/ExTR25.0022/00

Quality Assessment Report:

GB/CSAE/QAR24.0001/01

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

Thermocouple (TC) & RTD Temperature Probes in type of protection increased safety "e" designed to measure process temperature in liquid or gaseous media.

The measuring insert is designed with one or two measuring circuits and is equipped with thermocouple or RTD (Resistance Temperature Detector) sensors. These sensors are embedded in a densely compacted powder made of magnesium oxide (MgO) which provides excellent electrical insulation and thermal conductivity. The entire assembly is enclosed within a metallic sheath which is made of stainless steel for additional mechanical protection and durability. Epoxy glue is used to seal the sensor and seal the transition area. A compression fitting is optional for all sensor variants, allowing for secure and adjustable mounting in various applications. Additionally, a protective spring is optional for all variants, except for the basic version of the sensor that includes only the metallic stem and connection wire.

Refer to the certificate Annexe for additional information.

Conditions of manufacture

The Manufacturer shall comply with the following:

1. The final equipment shall be marked with the applicable ambient temperature range, as specified below, based on the type of junction box used
.

Manufacture of Junction box	Ambient range of Junction Box	Ambient range of Temperature probe
Pepperl +Fuchs	-40°C to +55°C	-20°C to +55°C
Bartec	-20°C to +40°C	-20°C to +40°C
QuintEx GmbH	-40°C to +50°C	-20°C to +50°C

2. A dielectric test at 500 Vrms in accordance with clause 6.1 of IEC 60079-7:2017 shall be performed on Temperature probe.

3. The manufacturer shall be responsible for ensuring that the ingress protection rating of IP65 is maintained upon installation of the probe in the junction box.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. Temperature probes without extended cables must be terminated in a safe (non-hazardous) area. Direct termination within hazardous areas is not allowed.

2. All unused screw terminals shall be fully tightened down by the end user as per the instructions provided by the junction box manufacturer.

3. It is the responsibility of the manufacturer or end user to ensure that external source of heating or cooling (if present) does not impact the temperature classification of the equipment.

4. It is the responsibility of the end user to ensure that the temperature at the transition area does not exceed 147°C, as the adhesive is restricted to this maximum temperature.

Annex:

IECEx CSA 25.0042X Iss 0 Annexe.pdf

EQUIPMENT (continued)

The sensor is available in a variety of insertion lengths, ranging from a minimum of 50 mm to a maximum of 300 meters, and comes in different diameters between 3 mm and 8 mm. There are four distinct sensor variants designed to meet different application requirements:

1. Sensor with metallic stem and connection wire: This basic version includes only the metallic stem and a direct connection wire.
2. Sensor with stem-to-cable transition: This version features a stainless-steel transition area between the stem and the extended cable, offering additional durability and flexibility.
3. Sensor with shielded sensing area and extended cable: This variant includes a sensing area protected by shielding and an extended cable for applications requiring enhanced protection.
4. Sensor with sensing area, cable transition, and extended cable: This version incorporates a sensing area, a stainless-steel transition area, and an extended cable for comprehensive application needs.

To ensure external sealing and structural stiffness, epoxy glue is used in the assembly. This provides robust protection and reliability, making the sensors suitable for use in demanding environments, including hazardous areas.

These sensors can be mounted within three different Ex eb (Increased Safety) or Ex tb (Dust Ignition Protection) pre-certified enclosures, depending on the specific application requirements. The certification details for these enclosures are as follows:

IECEx IBE 12.0031X / IBExU 12ATEX 1099X
IECEx CML 17.0144X / CML 17ATEX 3255X
IECEx EPS 14.0048 / EPS 13ATEX 1616
These enclosures provide the required level of safety and protection for use in explosive or hazardous environments, ensuring compliance.

The Process temperature:
For RTD: -200°C to 350°C
For Thermocouple: -200°C to 350°C.

Temperature class of Temperature Probes as a function of Process temperature:

Tp Max	Temperature class Gas	Temperature class Dust
+80°C	T6	T85°C
+95°C	T5	T100°C
+130°C	T4	T135°C
+195°C	T3	T155°C
+290°C	T2	T155°C
≤+350°C	T1	T155°C

Temperature probe will have different configuration as mentioned below:

1.) S80/S81=…=*Extension-Cable (without)*=…
2.) S80/S81=…=*Extension-Cable*=…
3.) S80/S81_BEARING=…=*Sensor Tip*=…=*Internal-Cable*=…
4.) S80/S81_BEARING=…=*Sensor Tip*=…=*Internal-Cable*=…=*Transition*=…=*Extension-Cable*=…

Everything written in italics are placeholders for which the versions in the offer/order confirmation and product documentation are specified more precisely according to customer requirements (material, diameter, length, etc.).

CSA Group Testing & Certification Inc.
178 Rexdale Boulevard,
Toronto, Ontario M9W 1R3