



# 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](http://www.iecex.com)

Certificate No.: **IECEX CSA 13.0028X** Page 1 of 6 Certificate history:  
Status: **Current** Issue No: 2 [Issue 1 \(2014-11-05\)](#)  
[Issue 0 \(2013-10-28\)](#)  
Date of Issue: 2021-10-22  
Applicant: **Endress+Hauser Flowtec AG**  
Kägenstrasse 7  
CH-4153, Reinach/BL1  
Switzerland  
Equipment: **Thermal Mass Flowmeter**  
Optional accessory:  
Type of Protection: **Type of Protection "n", Increased Safety "e"**  
Marking: Ex nA IIC T4...T1 Gc  
Ex ec IIC T4...T1 Gc  
Tamb: -40°C to 60°C

Approved for issue on behalf of the IECEx  
Certification Body:

**Dorin Stochitoiu**

Position:

**Technical Oversight Specialist**

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 [www.iecex.com](http://www.iecex.com) or use of this QR Code.



Certificate issued by:

**CSA Group**  
178 Rexdale Boulevard  
Toronto, Ontario M9W 1R3  
Canada





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Manufacturer: **Endress+Hauser Flowtec AG**  
Kägenstrasse 7  
CH-4153  
Reinach /BL1  
**Switzerland**

Additional  
manufacturing  
locations:

*See following pages for more locations*

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 60079-15:2010** Explosive atmospheres - Part 15: Equipment protection by type of protection "n"  
Edition:4

**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 Reports:

[CA/CSA/ExTR13.0030/00](#)

[CA/CSA/ExTR13.0030/01](#)

[CA/CSA/ExTR13.0030/02](#)

Quality Assessment Report:

[DE/TUN/QAR06.0004/09](#)



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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

The t-mass flow meters are available in 4 variants – A 150, B 150, T 150 and L 150. They operate on a thermal principle by monitoring the cooling effect of a gas or fluid stream as it passes over a heated transducer. Process gases or fluids flowing through the sensing section pass over two PT 100 RTD transducers of which one is used conventionally as a temperature sensing device, whilst the other is used as a heater. The temperature sensor monitors the actual process values whilst the heater is maintained at a constant differential temperature above this by varying the power consumed by the sensor. The greater the mass flow, the greater the cooling effect and power required for maintaining the temperature difference. The measured heater power is therefore a measure for the gas and fluid flow rate.

There are 2 different sensor variants, the flanged version – models t-mass A 150 and L 150, and the insertion version – models t-mass B 150 and T 150. All models are accompanied by electronics housed in a transmitter enclosure (G312) to form a measuring system. The t-mass A 150 and B 150 (rated 3W) share a similar sensor tip optimized for mass flow measurement of gases. The t-mass L 150 and T 150 (rated 4W) share a similar sensor tip optimized for mass flow measurement of liquids. The devices are available with an optional display.

Refer to EQUIPMENT (continued) for additional information and Model designations

## **SPECIFIC CONDITIONS OF USE: YES as shown below:**

- “Warning – in locations where extreme external humidity and internal temperature variations (e.g. frequent on-off cycles) may cause condensation inside the equipment, the interior should be periodically inspected”
- To only be used with a certified SELV/PELV power supply



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### Equipment (continued):

The equipment is to be operated with the following aspects in consideration:

- The equipment is to be disconnected only when the area is known to be non hazardous.
- The transmitter housing shall only be opened when the device is not energized or the area is known to be non hazardous.

This certification covers the following models:

6AABcc-ddefghiklllm+### t-mass A150 Thermal Mass Flowmeter for Gases Flowcell  
 O6AABcc-ddefghiklllmn+### t-mass A150 Thermal Mass Flowmeter for Gases Flowcell  
 6BABcc-ddefghiklllm+### t-mass B150 Thermal Mass Flowmeter for Gases Insertion Type  
 O6BABcc-ddefghiklllmn+### t-mass B150 Thermal Mass Flowmeter for Gases Insertion Type  
 6LABcc-ddefghiklllm+### t-mass L150 Thermal Mass Flowmeter for Liquids Flowcell  
 O6LABcc-ddefghiklllmn+### t-mass L150 Thermal Mass Flowmeter for Liquids Flowcell  
 6TABcc-ddefghiklllm+### t-mass T150 Thermal Mass Flowmeter for Liquids Insertion Type  
 O6TABcc-ddefghiklllmn+### t-mass T150 Thermal Mass Flowmeter for Liquids Insertion Type

Where:

- dd = I5
- e = D or X
- f = A, B, K, Q or X
- h = A or X
- i = A, B, C, D, Q or X

The following table illustrates the process and ambient temperature limitations for the different temperature classes.

Device	Temperature class	Ambient temperature	Process temperature
t-mass A 150 t-mass B 150	T4	-40°C to +60°C	-40°C to +130°C
t-mass L 150 t-mass T 150	T3 -T1		-40°C to +150°C



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

Issue 1: This version of the certificate was issued to include minor alterations to the mechanical design of the equipment and to introduce additional model codes.

Issue 2: Updated standard IEC 60079-0 to latest edition (IEC 60079-0:2017, Ed. 7.0) and added assessment for type of protection "Increased Safety" e (IEC 60079-7:2017 Ed. 5.1)



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Additional manufacturing locations:

**Endress+Hauser Flowtec (Brazil)  
Fluxômetros Ltda.**  
Estrada Municipal Antonio Sesti  
600-Bairro Recreio Costa Verde  
Itatiba, SP- 13254-085  
**Brazil**

**Endress+Hauser Flowtec (China) Co. Ltd.**  
China – Singapore  
Suzhou Industrial Park (SIP)  
Su-Hong-Zhong-Lu No. 465  
Jiangsu Province  
215021 Suzhou  
**China**

**Endress+Hauser Flowtec (India) Pvt. Ltd.**  
M-171-176, Waluj MIDC Industrial Area  
Aurangabad – 431 136  
Maharashtra State  
**India**

**Endress+Hauser Flowtec AG**  
35, Rue de l' Europe  
68700 Cernay  
**France**

**Endress+Hauser Flowtec AG (Division  
USA)**  
2330 Endress Place  
Greenwood, Indiana 46143  
**United States of America**