

# 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 CML 19.0025X		Issue No: 0	Certificate history: Issue No, 0 (2019-03-20)
Status:	Current			· · · · · · · · · · · · · · · · · · ·
Date of Issue:	2019-03-20		Page 1 of 3	
Applicant:	Heinrichs Messtechnik GmbH Robert-Perthel-Straße 9 50739 Cologne Germany			
Equipment: <i>Optional accessory:</i>	HPC Coriolis Mass-flow Sensor			
Type of Protection:	Intrinsic Safety			
Marking:	Standard connection	High temperature connection		
	Ex ia <b>II</b> C T4 Ga	Ex ia <b>II</b> C T4T2 Ga		
	Ex ia IIIC T135°C Da	Ex ia IIIC T135°C Da		
		Ex ia IIIC T190°C/T240°C Db		
	Tamb = -40°C to +60°C	Tamb = -40°C to +60°C		
	Refer to Annex for information regarding the m	arking variables.		
Approved for issue on behalf of the IECEx Certification Body:		A Snowdon MIET		
Position:		Certification Officer		
Signature: (for printed version)		A Showida	B	

Date:

March 20, 2019

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:

Certification Management Limited Unit 1, Newport Business Park New Port Road Ellesmere Port, CH65 4LZ United Kingdom





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Date of Issue:	2019-03-20
Manufacturer:	Heinrichs Messtechnik GmbH Robert-Perthel-Straße 9 50739 Cologne Germany

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 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:

<b>IEC 60079-0 : 2017</b> Edition:7.0	Explosive atmospheres - Part 0: Equipment - General requirements
<b>IEC 60079-11 : 2011</b> Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

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:

GB/CML/ExTR19.0048/00

Quality Assessment Report:

DE/BVS/QAR11.0001/06



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 Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The HPC Coriolis Mass-flow Sensor is an instrument for the measurement of mass-flow, density, or volume of liquids and gases in pipes. The equipment comprises two parallel measurement pipes, three measurement coils, and a single RTD temperature sensor, within an aluminium or stainless steel protective cover. A multipole circular connector is provided for the electrical connection of the equipment. In high temperature versions, the connector is separated from the main equipment body by a heatsinking extension tube.

See Annex for full description and Conditions of Manufacture.

SPECIFIC CONDITIONS OF USE: YES as shown below:

See Annex for Specific Conditions of Use.

Annex:

IECEx CML 19.0025X Annex Issue 0.pdf

Annexe to:	IECEx CML 19.0025X Issue 0
Applicant:	Heinrichs Messtechnik GmbH
Apparatus:	HPC Coriolis Mass-flow Sensor



### **Product description**

The HPC Coriolis Mass-flow Sensor is an instrument for the measurement of mass-flow, density, or volume of liquids and gases in pipes. The equipment comprises two parallel measurement pipes, three measurement coils, and a single RTD temperature sensor, within an aluminium or stainless steel protective cover. A multipole circular connector is provided for the electrical connection of the equipment. In high temperature versions, the connector is separated from the main equipment body by a heatsinking extension tube.

The equipment model number comprises digits which define the construction and the materials used as follows.



Intrinsic safety is achieved by limiting energy storage and discharge, and by connecting to the nonhazardous area via intrinsically safe interface devices.

> Unit 1, Newport Business Park New Port Road Ellesmere Port CH65 4LZ

T +44 (0) 151 559 1160 E info@cmlex.com

www.cmlex.com

Company Reg No. 8554022 VAT No. GB163023642



Exciter circuit		Pick up circuit (2 off)			Temperature circuit			
Ui	=	30V	Ui	=	30V	Ui	=	30V
li	=	90mA	li	=	25mA	li	=	10mA
Pi	=	400mW	Pi	=	130mW	Pi	=	40mW
Ci	=	0	Ci	=	0	Ci	=	0
Li	=	4.38mH	Li	=	50mH	Li	=	0

The equipment has the following safety description:

The equipment temperature class, surface temperature, and equipment protection level are dependent upon the ambient temperature, process temperature, and connection type as follows:

Connection type	Ambient temperature range	Maximum process temperature	Temperature class	Surface temperature	EPL
Standard or high temperature	-40°C to 60°C	80°C	T4	T135°C	Ga, Da
High temperature	-40°C to 60°C	130°C	Т3	T190°C	Ga, Db
High temperature	-40°C to 49°C	180°C	T2	T240°C	Ga, Db

### **Conditions of Manufacture**

The following conditions are required of the manufacturing process for compliance with the certification.

i. The equipment shall be subjected to an electric strength test using a test voltage of 500 Vac applied between each circuit and frame, for a period of 60 secs.

Alternatively:

a) a voltage of 20% higher may be applied for 1 second.

b) a d.c. test voltage is allowed as an alternative to the a.c. test voltage and shall be 170% of the specified a.c. r.m.s. test voltage.

No breakdown or flashover shall occur



### **Specific Conditions of Use**

The following conditions relate to safe installation and/or use of the equipment:

- i. The equipment enclosure may be manufactured from aluminium. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered during installation, particularly if the equipment is installed in a zone 0 location.
- ii. When used in areas requiring equipment protection level Da, Db, or Dc, under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the user/installer shall implement precautions to prevent the build-up of electrostatic charge, e.g. locate the equipment where a charge-generating mechanism (such as wind-blown dust) is unlikely to be present and clean with a damp cloth.
- iii. For the high temperature version, the temperature class, assigned maximum surface temperature, maximum ambient temperature and Equipment Protection Level (EPL) are dependent on the maximum process temperature applied by the end-user/installer. The options are detailed under the description on this certificate. When the maximum process temperature of the final installation is determined by the end user, the temperature class, assigned maximum surface temperature, maximum ambient temperature and the Equipment Protection Level (EPL) which are applicable to the applied process temperature shall be observed and complied with.

The equipment is marked with the maximum ambient temperature and maximum process temperature of all options of the above mentioned variables, but the limits may be lower than those marked depending on the actual process temperature applied.