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Address



EU Type Examination Certificate CML 19ATEX2096X Issue 0

- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
- 2 Equipment HPC Coriolis Mass-flow Sensor
- 3 Manufacturer Heinrichs Messtechnik GmbH

Robert-Perthel-Straße 9, 50739 Cologne, Germany

- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 CML B.V., Chamber of Commerce No 6738671, Hoogoorddreef 15, Amsterdam, 1101 BA, The Netherlands, Notified Body Number 2776, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 12.

- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN 60079-0:2018

EN 60079-11:2012

10 The equipment shall be marked with the following:

Standard connection:	High temperature connection:
⟨€x⟩ _{II 1 G}	⟨€x⟩ _{II 1 G}
ll 1 D	II 1 D
	II 2 D
Ex ia IIC T4 Ga	Ex ia IIC 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 Sections 11 and 14 for details relating to the ambient, Temperature Class, assigned maximum surface temperature, EPL (Equipment Protection Level) and process temperature options.

This certificate shall only be copied in its entirety and without change www.CMLEx.com A Snowdon MIET Certification Officer





11 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.

Design		Options not affecting certification
Accessories		Options not affecting certification
Density calibration Options not affecting certification	Options not affecting certification	
- Mass-flow calibra	tion	Options not affecting certification
- Approval	L	ATEX and IECEx certified
Type of	R	Standard temperature -40°C to +80°C
connection	L	High temperature -40°C to +180°C
Installation type		Options not affecting certification
	А	Anodized aluminium
- Sensor hood	В	High temperature anodized aluminium
	С	Stainless steel
Pressure rating		Options not affecting certification
Process connection		Options not affecting certification
 Measuring range 		Options not affecting certification
Wetted parts		Options not affecting certification

HPC-<u>ABC</u>-<u>DEFG</u>-<u>HIJK</u>-<u>LM</u>-<u>NO</u>-<u>P</u>-<u>Q</u>

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

The equipment has the following safety description:

Exciter circuit		Pick up circuit (2 off)		Т	-	oerature rcuit		
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 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	Τ4	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

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	20 Mar 2019	R11996A/00	Issue of prime certificate

Note: Drawings that describe the equipment or component are listed in the Annex.

13 Conditions of manufacture

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

- 13.1 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.





14 Specific Conditions of Use (Special Conditions)

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

- 14.1 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.
- 14.2 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.
- 14.3 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.



Certificate Annex

Certificate Number	CML 19ATEX2096X
Equipment	HPC Coriolis Mass-flow Sensor
Manufacturer	Heinrichs Messtechnik GmbH

The following documents describe the equipment or component defined in this certificate:

Issue 0

Drawing no.	Sheets	Rev	Approved date	Title
HPC-EX-1001	1 of 1	-	20 Mar 2019	HPC High Temperature Overview
HPC-EX-1002	1 of 1	-	20 Mar 2019	HPC-01+02 General Arrangement standard version
HPC-EX-1003	1 of 1	-	20 Mar 2019	HPC-03 General Arrangement high- temperature version
HPC-EX-1004	1 of 1	-	20 Mar 2019	Flange for HPC Cooling Tower
HPC-EX-1005	1 of 1	-	20 Mar 2019	Cooling Tube for HPC Cooling Tower
HPC-EX-1006	1 of 1	-	20 Mar 2019	Cooling Fins for HPC Cooling Tower
HPC-EX-1007	1 of 1	-	20 Mar 2019	HPC Cooling Tower
HPC-EX-1008	1 of 1	а	20 Mar 2019	HPC-01 Coil drawing
HPC-EX-1010	1 of 1	а	20 Mar 2019	HPC Pin Assignment HAN R23 connector
HPC-EX-1011	1 of 1	-	20 Mar 2019	HAN R23 connector Creepage and clearance
HPC-EX-1013	1 of 1	1.0	20 Mar 2019	PCB Protective coating
HPC-EX-2001	1 of 1	0	20 Mar 2019	Circuit diagram HPC Sensor
HPC-EX-2002	1 to 4	1.1	20 Mar 2019	HPC PCB (for 1.5mm loops)
HPC-EX-2004	1 to 4	1.0	20 Mar 2019	HPC PCB (for 2mm loops)
HPC-EX-2006	1 to 4	1.0	20 Mar 2019	HPC PCB (for 3mm loops)
HPC-EX-4003	1 to 2	-	20 Mar 2019	Material composition of the HPC sensors
LOGO 180	1 of 1	b	20 Mar 2019	HPC Nameplate
LOGO 181	1 of 1	-	20 Mar 2019	HPC Nameplate High Temperature