



## (1) EC-TYPE-EXAMINATION CERTIFICATE (Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**



(3) EC-type-examination Certificate Number:

**PTB 01 ATEX 2181**

(4) Equipment: Variable-area flowmeter, type H250/M9-EEEx

(5) Manufacturer: Krohne Messtechnik GmbH & Co. KG

(6) Address: 47058 Duisburg, Germany

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report PTB Ex 01-21216.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 50014:1997 + A1 + A2**

**EN 50020:1994**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

**II 2 G EEx ia IIC T6**

Zertifizierungsstelle Explosionsschutz

Braunschweig, December 12, 2001

By order:

*(signature)*

Dr.-Ing. U. Johannsmeyer  
Regierungsdirektor

**3 pages, correct and complete as regards content.**  
By order:

Dr.-Ing. Johannsmeyer  
Direktor und Professor

Braunschweig, December 9 2008

sheet 1/3

## SCHEDULE

(13)

(14) EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2181

(15) Description of equipment

The variable-area flowmeter of type H250/M9-EEEx is used for the measurement of the volumetric flow of flammable and non-flammable gases and liquids. The equipment is manufactured as an electrical variant with different electronic assemblies as well as a mechanical variant without electronic system.

For maximum permissible ambient and medium temperatures depending on the temperature class for the different electronic assemblies, reference is made to tables 1 through 6 given in the annex of the operating instructions.

For the mechanical variant the temperature class is immediately determined by the medium temperature. The following limits apply:

Medium temperature, standard design	$T_m = -20\text{ °C up to } +200\text{ °C}$
Medium temperature, HT-design	$T_m = -20\text{ °C up to } +300\text{ °C}$
Ambient temperature	$T_{amb} = -20\text{ °C up to } +60\text{ °C}$

### Electrical data:

Signal output ESKII

type of protection Intrinsic Safety EEx ia IIC

only for connection to a certified intrinsically safe circuit

Maximum values:

$$U_i = 30\text{ V}$$

$$I_i = 100\text{ mA}$$

$$P_i = 1\text{ W}$$

$$C_i = 20\text{ nF}$$

$L_i$  negligibly low

Signal output ESK3-PA

type of protection Intrinsic Safety EEx ia IIC

only for connection to a certified intrinsically safe circuit according to the FISCO-model

Maximum value:

$$U_i = 24\text{ V}$$



Limit-value transmitter K

type of protection Intrinsic Safety EEx ia IIC

only for connection to certified intrinsically safe circuits

Maximum values per circuit:

for slot-type initiator, type SC3,5-N0-Y

$U_i = 16 \text{ V}$		$U_i = 16 \text{ V}$
$I_i = 25 \text{ mA}$		$I_i = 52 \text{ mA}$
$P_i = 64 \text{ mW}$	or	$P_i = 169 \text{ mW}$
$C_i = 150 \text{ nF}$		$C_i = 150 \text{ nF}$
$L_i = 150 \text{ }\mu\text{H}$		$L_i = 150 \text{ }\mu\text{H}$

for slot-type initiators, type SJ3,5-SN and type SJ3,5-S1N

$U_i = 16 \text{ V}$		$U_i = 16 \text{ V}$
$I_i = 25 \text{ mA}$		$I_i = 52 \text{ mA}$
$P_i = 64 \text{ mW}$	or	$P_i = 169 \text{ mW}$
$C_i = 30 \text{ nF}$		$C_i = 30 \text{ nF}$
$L_i = 100 \text{ }\mu\text{H}$		$L_i = 100 \text{ }\mu\text{H}$

(16) Test report PTB Ex 01-21216

(17) Special conditions for safe use

none

Notes for manufacture and operation

The specifications given in the operating instructions, in particular the tables in the annex shall be observed.

(18) Essential health and safety requirements

met by compliance with the standards stated above

Zertifizierungsstelle Explosionsschutz  
By order:

(signature)

Dr.-Ing. U. Johannsmeyer  
Direktor und Professor

Braunschweig, December 12, 2001

## 1. SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2181

(Translation)

Equipment: Variable-area flowmeter, type H250/M9-EEEx

Marking:  II 2 G EEx ia IIC T6

Manufacturer: Krohne Messtechnik GmbH & Co. KG

Address: Ludwig Krohne Straße 5, 47058 Duisburg, Germany

### Description of supplements and modifications




In the future the variable-area flowmeter of type H250/M9-EEEx may also be manufactured and operated according to the test documents listed in the test report. The modifications comprise the adaption to the current state of the standard series EN 60079-et seqq. and , therefore, the marking, the introduction of a new variant with lacquered enclosure parts intended for the application in gas group IIB, the installation of an alternative limit-value transmitter, the introduction of a stainless steel enclosure, the mounting position / flow direction, the reconfiguration of the type code as well as the extension of the minimum ambient and medium temperature according to the following table:

variant	permissible range of the ambient temperature	permissible minimum medium temperature
H250/.../M9/ESK	-40 °C bis +60 °C	-40 °C
H250/.../M9/.../K1, H250/.../M9/.../K2	-40 °C bis +60 °C	-40 °C
H250/.../M9/.../K1, H250/.../M9/.../K2 with limit-value transmitter, type SJ3,5-S1N	-25 °C bis +60 °C	-25 °C

In the future the type designation of the equipment will read as follows:

**Variable-area flowmeter, type H250/.../M9... -Ex**

In the future the marking will depend on the variant as follows:

variant with special lacquering of the display unit	variant with lacquered display unit and additionally lacquered measuring unit	all other variants
 II 2 G Ex ia IIB T6...T1	 II 2 G Ex ia IIB T4...T1	 II 2 G Ex ia IIC T6

Sheet 1/2

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Braunschweig und Berlin

## 1. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 01 ATEX 2181

The "Electrical data" and all other specifications of the EC-type examination certificate apply without changes also to this 1. supplement.

### Applied standards

EN 60079-0:2006

EN 60079-11:2007

Test report: PTB Ex 08-28244

Zertifizierungssektor Explosionsschutz

By order:

  
Dr.-Ing. U. Johannsmeyer  
Direktor und Professor



Braunschweig, December 8, 2008