



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

Certificate No.: IECEx BVS 17.0063

Issue No: 0

Certificate history:

[Issue No. 0 \(2017-08-22\)](#)

Status: **Current**

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Date of Issue: **2017-08-22**

Applicant: **Rheonik Messtechnik GmbH**  
Rudolf-Diesel-Straße 5  
85235 Odelzhausen  
**Germany**

Equipment: **Sensor type RHM\***

*Optional accessory:*

Type of Protection: **Equipment protection by intrinsic safety "i"**

Marking:

Ex ia IIC T6...T1 Ga or  
Ex ib IIC T6...T1 Gb or  
Ex ic IIC T6...T1 Gc

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

Jörg Koch

*Position:*

Head of Certification Body

*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 the [Official IECEx Website](#).

Certificate issued by:

**DEKRA EXAM GmbH**  
Dinnendahlstrasse 9  
44809 Bochum  
Germany

 **DEKRA**  
On the safe side.



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Manufacturer: **Rheonik Messtechnik GmbH**  
Rudolf-Diesel-Straße 5  
85235 Odelzhausen  
**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 electrical 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:

**IEC 60079-0 : 2011** Explosive atmospheres - Part 0: General requirements  
Edition:6.0

**IEC 60079-11 : 2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

*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:

[DE/BVS/ExTR17.0062/00](#)

Quality Assessment Report:

[DE/TUN/QAR08.0005/04](#)



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

#### 1. Model Designation

See Annex

#### 2. Description

The Coriolis mass flow meter RHM\* in combination with a separate certified transmitter is used for flow measurement (fluid / gas). The flow meter contains oscillating tubes, coils, temperature sensors, diodes and either a connection box with terminals or a fixed cable (maximum cable length 10 m).

#### 3. Parameters

See Annex

**SPECIFIC CONDITIONS OF USE: NO**

### Annex:

[BVS\\_17\\_0063\\_Rheonik\\_Annex.pdf](#)



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**Annex**

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## 1. Model Designation

Sensor type: MaaaTTPPCCCMFFCC-OO-EE

with

Maaa Meter type

M#5L = RHM015

M03L = RHM03

M04L = RHM04

M06L = RHM06

M08L = RHM08

M12L = RHM12

M15L = RHM15

M20L = RHM20

M30L = RHM30

M40L = RHM40

M60L = RHM60

M80L = RHM80

M100 = RHM100

M160 = RHM160

TT Medium Temperature range

N1 = -20 °C to +120 °C

NA = -50 °C to +120 °C

N\* = special temperature ranges between -50 °C and +120 °C

E2 = -50 °C to +210 °C

E3 = -196 °C to +50 °C

E\* = special temperature ranges between -196 °C and +210 °C

H4 = -20 °C to +350 °C

H5 = -20 °C to +400 °C

H\* = special temperature ranges between -20 °C and +400 °C

PPCCCMFF Marking (Mechanical features: pressure range, mechanical construction, material, process connection) without influence to type of protection

CC Connection type and electrical properties

SC = stainless steel connection box, 2 Pt100

SM = stainless steel connection box, 2 Pt1000

T\* = fixed cable up to 10 m, only Zone 1 and 2

OO 01 to ZZ: Marking without influence to type of protection

EE Hazardous areas approvals

A0 = Zone 0 (only for Version with stainless steel connection box (S\*))

Marked: Ex ia IIC T6...T1 Ga

A1 = Zone 1

Marked: Ex ib IIC T6...T1 Gb

AL = Zone 1 (reduced drive power)

Marked: Ex ib IIC T6...T1 Gb

AE = Zone 2

Marked: Ex ic IIC T6...T1 Gc

Note: Not all combinations are possible. For available combinations see instructions.

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**Annex**

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### 3. Parameters

The drive circuit shall be connected to a linear source (with a minimum resistance  $R_i = 65 \text{ Ohm}$ )- with  $C_i$  and  $L_i$  negligible.

#### 3.1 Version AL (reduced drive power )

##### 3.1.1 Drive circuit (wire brown - blue or terminals 1 - 2)

Maximum input voltage	$U_i$	DC	7.2	V
Maximum input current	$I_i$		88.6	mA
Maximum input Power	$P_i$		159	mW
Maximum internal capacitance	$C_i$		10	nF
Maximum internal inductance	$L_i$		4.5	mH

##### 3.1.2 Pickup circuit (wire yellow - green and grey - white or terminals 6 – 7 and 8 - 9)

Maximum input voltage	$U_i$	DC	7.4	V
Maximum input current	$I_i$		29	mA
Maximum input Power	$P_i$		54	mW
Maximum internal capacitance	$C_i$		10	nF
Maximum internal inductance	$L_i$		4.5	mH

##### 3.1.3 Temperature circuit (wire red – pink and orange – pink or terminals 3 - 4 and 5 – 4)

Maximum input voltage	$U_i$	DC	7.4	V
Maximum input current	$I_i$		58	mA
Maximum input Power	$P_i$		107	mW
Maximum internal capacitance	$C_i$		10	nF
Maximum internal inductance	$L_i$		0.1	mH

#### 3.2 Version A0, A1 and AE

##### 3.2.1 Drive circuit (wire brown - blue or terminals 1 - 2)

Maximum input voltage	$U_i$	DC	9.3	V
Maximum input current	$I_i$		144	mA
Maximum input Power	$P_i$		335	mW
Maximum internal capacitance	$C_i$		10	nF
Maximum internal inductance	$L_i$		1.5	mH

##### 3.2.2 Pickup circuit (wire yellow - green and grey - white or terminals 6 – 7 and 8 - 9)

Maximum input voltage	$U_i$	DC	7.4	V
Maximum input current	$I_i$		29	mA
Maximum input Power	$P_i$		54	mW
Maximum internal capacitance	$C_i$		10	nF
Maximum internal inductance	$L_i$		4.5	mH

##### 3.2.3 Temperature circuit (wire red – pink and orange – pink or terminals 3 - 4 and 5 – 4)

Maximum input voltage	$U_i$	DC	7.4	V
Maximum input current	$I_i$		58	mA
Maximum input Power	$P_i$		107	mW
Maximum internal capacitance	$C_i$		10	nF
Maximum internal inductance	$L_i$		0.1	mH

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### 3.3. Temperature class

The classification into a temperature class depends on the temperature of the medium taking into account the maximum operating temperature of the sensor and is shown in the following tables.

These values may be restricted by the used materials, see manual.

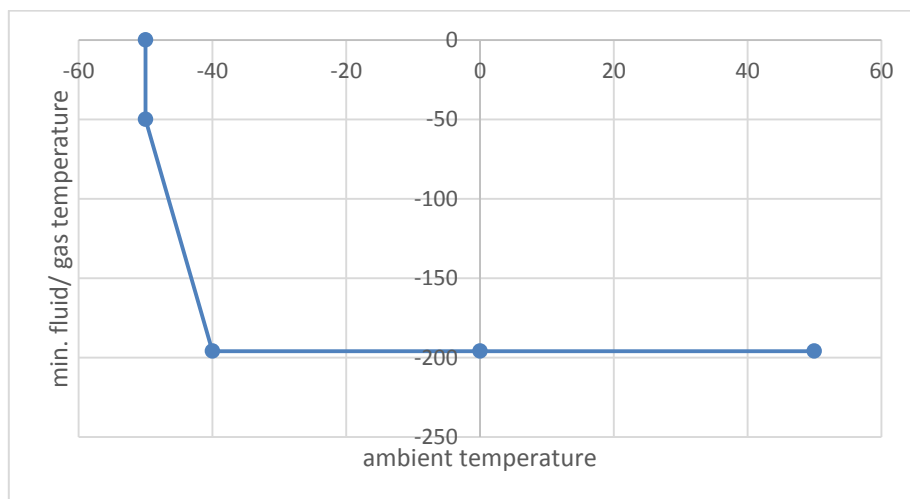
#### Temperature Ranges N\*

Temperature class	T6	T5	T4	T3	T2	T1
Min. ambient and medium temperature	-50 °C	-50 °C	-50 °C	-50 °C	-50 °C	-50 °C
Max. ambient temperature	65 °C	80 °C	80 °C	80 °C	80 °C	80 °C
Max. medium temperature	65 °C	80 °C	115 °C	120 °C	120 °C	120 °C

#### Temperature Ranges E\*

Temperature class	T6	T5	T4	T3	T2	T1
Min. ambient temperature	-50 °C*	-50 °C*	-50 °C*	-50 °C*	-50 °C*	-50 °C*
Min. medium temperature	-196 °C*	-196 °C*	-196 °C*	-196 °C*	-196 °C*	-196 °C*
Max. ambient temperature	65 °C	80 °C	80 °C	80 °C	80 °C	80 °C
Max. medium temperature	65 °C	80 °C	115 °C	180 °C	210 °C	210 °C

\*) At ambient temperature below -40 °C see graph below.



Derating of minimum medium (fluid / gas) temperature for low ambient temperatures.

#### Temperature Ranges H\*

Temperature class	T6	T5	T4	T3	T2	T1
Min. ambient and medium temperature	-	-	-20 °C	-20 °C	-20 °C	-20 °C
Max. ambient temperature	-	-	80 °C	80 °C	80 °C	80 °C
Max. medium temperature	-	-	105 °C	170 °C	270 °C	400 °C