



# 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 18.0053X

Issue No: 0

Certificate history:

[Issue No. 0 \(2018-07-27\)](#)

Status: **Current**

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Date of Issue: **2018-07-27**

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

Equipment: **Transmitter type RHE21**

*Optional accessory:*

Type of Protection: **Equipment protection by flameproof enclosures "d", Equipment protection by intrinsic safety "i", Equipment protection by increased safety "e"**

Marking:

Ex db eb [ia Ga] IIC T4 Gb or  
Ex db [ia Ga] IIC T4 Gb or  
Ex db ec [ia Ga] IIC T4 Gc or  
Ex db [ia Ga] IIC T4 Gc or  
[Ex ia Ga] IIC

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

Dr. Christiane Sultan

*Position:*

Deputy 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 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 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 60079-1 : 2014-06</b> Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
<b>IEC 60079-11 : 2011</b> Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
<b>IEC 60079-7 : 2015</b> Edition:5.0	Explosive atmospheres – Part 7: Equipment protection by increased safety "e"

*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/ExTR18.0053/00](#)

Quality Assessment Report:

[DE/TUN/QAR08.0005/06](#)



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## Schedule

### EQUIPMENT:

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

### Subject and Type

See Annex

### Description

The transmitter is made in type of protection Flameproof Enclosure. The electrical connection is made either by separately certified cable glands in type of protection Flameproof Enclosure or by terminal boxes in type of protection Increased Safety.  
The transmitter in combination with a separate certified Coriolis mass flow meter is used for flow measurement (fluid / gas).  
The transmitter generates an intrinsically safe circuit for connecting the Coriolis mass flow meter.  
It measures the rough data from the sensor, calculates flow, density and temperature and gives out the values via analog or frequency signals or via interface and display.

Listing of all components used referring to older standards

See Annex

### Parameters

See Annex

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

The intrinsically safe circuits are connected to earth; along the intrinsically safe circuits potential equalization must exist.

### Annex:

[BVS\\_18\\_0053X\\_Rheonik\\_Annex.pdf](#)



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**Annex**  
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## Subject and Type

Transmitter series RHE21 type E21-\*\*\*\*-\*\*\*\*-\*\*\*\*-\*\*\*

With

E21 RHE21

1. + 2. Asterisk Housing Options  
E1, E2 = aluminum connection box, fixed sensor cable up to 10 m  
E3, E4, EP = SS connection box, fixed sensor cable up to 10 m  
E5 = SS connection box for I/O and for sensor  
H1, H2 = no connection box, fixed sensor cable up to 10 m  
H3 = connection box for sensor cable
3. + 4. Asterisk Power supply options  
D1 = 12 to 24 V DC  
A1 = 100 to 240 V AC  
U1 = DC plus AC
5. + 6. Asterisk Marking without influence to type of protection (SW Options)
7. + 8. Asterisk Marking without influence to type of protection (I/O Configuration Options)
9. + 10. Asterisk Hazardous areas approvals  
IECEx:  
A1 = Ex db [ia Ga] IIC T4 Gb RHE21 in zone 1 or 2, (housing H\*)  
Ex db eb [ia Ga] IIC T4 Gb RHE21 in zone 1 or 2, (housing E\*)  
A2 = Ex db [ia Ga] IIC T4 Gc RHE21 in zone 2, (housing H\*)  
Ex db ec [ia Ga] IIC T4 Gc RHE21 in zone 2, (housing E\*)  
AS = [Ex ia Ga] IIC RHE21 outside explosive areas
11. + 12. Asterisk Marking without influence to type of protection (Measurement Certifications)
13. - 15. Asterisk Marking without influence to type of protection (Special Options)
- Note: Not all combinations are possible. For available combinations see instructions.

Listing of all components used referring to older standards

Subject and type	Certificate	Standards
Terminal type FRONT 2,5-H/...-EX	IECEx KEM 07.0023U <sup>1</sup>	IEC 60079-0:2011 IEC 60079-7:2015
Bushing type 07-91** _****/****	IECEx EPS 13.0045U <sup>1</sup>	IEC 60079-0:2011 IEC 60079-1:2014

<sup>1</sup> No applicable technical differences

<sup>2</sup> Technical differences evaluated and found satisfactory



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**Annex**

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## Parameters

1	Non intrinsically safe main power supply				
1.1	For type RHE21**A1/U1*****, terminals 23 - 24				
	Nominal voltage	AC	90 – 250	V	
	Maximum voltage	$U_m$	AC	250	V
1.2	For Type RHE21**D1/U1*****, terminals 20 - 21				
	Nominal voltage	DC	10 – 28	V	
	Maximum voltage	$U_m$	AC	250	V
2	Non-intrinsically safe input/output circuits (for all types)				
2.1	terminals 31 - 34 (digital out)				
	Nominal voltage	DC	30	V	
	Maximum voltage	$U_m$	AC	250	V
2.2	terminals 35 - 36 (digital in)				
	Nominal voltage	DC	30	V	
	Maximum voltage	$U_m$	AC	250	V
2.3	terminals 51-56 (analog out)				
	Nominal voltage	DC	30	V	
	Maximum voltage	$U_m$	AC	250	V
2.4	terminals 70 - 71 (RS 485)				
	Nominal voltage		5	V	
	Maximum voltage	$U_m$	AC	250	V
2.5	USB				
	Nominal voltage		5	V	
	Maximum voltage	$U_m$	AC	250	V
3	Intrinsically safe circuits (for all types)				
3.1	Drive circuit (wire brown - blue or terminals 1 - 2)				
	Maximum output voltage	$U_o$	DC	8.1	V
	Maximum output current	$I_o$		136	mA
	Maximum output Power	$P_o$		275	mW
	Maximum external capacitance	$C_o$		2000	nF
	For Group IIC				
	Maximum external inductance	$L_o$		1.9	mH
	For Group IIB				
	Maximum external inductance	$L_o$		7.5	mH
3.2	Pickup circuits (wire yellow - green and grey - white or terminals 6 – 7 and 8 - 9)				
	Maximum output voltage	$U_o$	DC	2.4	V
	Maximum output current	$I_o$		9	mA
	Maximum output Power	$P_o$		5.4	mW
	Maximum external capacitance	$C_o$		2000	nF
	Maximum external inductance	$L_o$		100	mH



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- 3.3 Temperature circuits (wire red – pink and orange – pink or terminals 3 - 4 and 5 – 4)  
Circuit 1: cable red - pink or terminals 3 - 4  
Circuit 2: cable pink - orange or terminals 5 - 4  
Only for connecting temperature sensors. Output values per circuit
- |  |       |    |         |
|--|-------|----|---------|
| Maximum output voltage                             | $U_o$ | DC | 6.1 V   |
| Maximum output current                             | $I_o$ |    | 45.7 mA |
| (Total current via GND (pink cable or terminal 4)) |       |    | 91.4 mA |
| Maximum output Power                               | $P_o$ |    | 69.7 mW |
| Maximum external capacitance                       | $C_o$ |    | 2000 nF |
| Maximum external inductance                        | $L_o$ |    | 1 mH    |
- 3.4 Analog 4-20 mA Signal (terminals 60 - 61)
- |                              |       |    |         |
|------------------------------|-------|----|---------|
| Maximum output voltage       | $U_o$ | DC | 24.7 V  |
| Maximum output current       | $I_o$ |    | 91.5 mA |
| Maximum output Power         | $P_o$ |    | 565 mW  |
| Maximum external capacitance | $C_o$ |    | 100 nF  |
| Maximum external inductance  | $L_o$ |    | 4 mH    |
- 4 Thermal Data
- |                           |  |  |                     |
|---------------------------|--|--|---------------------|
| Ambient temperature range |  |  | -40 °C up to +60 °C |
|---------------------------|--|--|---------------------|