

**IBExU Institut für Sicherheitstechnik GmbH**  
An-Institut der TU Bergakademie Freiberg



[1] **EU-TYPE EXAMINATION CERTIFICATE - Translation**

[2] Equipment or protective systems  
intended for use in potentially explosive atmospheres, Directive 2014/34/EU

[3] EU-type examination certificate number **IBExU18ATEX1124 X** | Issue 0

[4] Product: **Intrinsically Safe Remote Speaker Microphone**  
Type RSM-Ex 01\*

[5] Manufacturer: ecom instruments GmbH

[6] Address: Industriestr. 2  
97959 Assamstadt  
GERMANY

[7] This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] IBExU Institut für Sicherheitstechnik GmbH, notified body number 0637 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 product has been found to comply with the essential health and safety requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential test report IB-18-3-0050.

[9] Compliance with the essential health and safety requirements has been assured by compliance with:  
EN 60079-0:2012+A11:2013 EN 60079-11:2012  
except in respect of those requirements listed at item [18] of the schedule.

[10] If the sign "X" is placed after the certificate number, it indicates that the product is subject to the specific conditions of use specified in the schedule to this certificate.

[11] This EU-type examination certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

[12] The marking of the product shall include the following:

**Ex II 2G Ex ib IIC T4 Gb**  
**Ex II 2D Ex ib IIIC T135 °C Db IP64**  
**Ex I M2 Ex ib I Mb**  
**-20 °C ≤ T<sub>a</sub> ≤ +55 °C**

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By order

  
Dipl.-Ing. Willamowski

Certificates without signature and seal are not valid. Certificates may only be duplicated completely and unchanged. In case of dispute, the German text shall prevail.



Freiberg, 2019-01-15

[13] **Schedule**

[14] **Certificate number IBExU18ATEX1124 X | Issue 0**

[15] **Description of product**

The RSM-Ex 01\* is an intrinsically safe remote speaker microphone. The connection to the smartphone or further sources is realized with cable. It is a hand held device. The mounting on the user via belt clip is also possible. Power is supplied by a Li-ion battery, which is permanently installed in the device. Charging must take place outside the hazardous locations. Optionally, approved headsets can be used with this device.

Technical data:

Ambient temperature range: from -20 °C to +55 °C  
Degree of ingress protection: IP64

Fixed battery MoliceI ICP103450CA (Li-ION) or  
MoliceI ICP103450DA (Li-ION)  
Nominal voltage: 3.7 V  
Nominal capacity: 1960 mAh or 2200 mAh

Intrinsically safe signal circuit in Ex ib IIC

$U_o$  4.2 V  
 $I_o$  22.3 mA  
 $P_o$  23.5 mW

$U_i$  4.2 V  
 $I_i$  300 mA  
 $P_i$  400 mW  
 $L_i$  1  $\mu$ H  
 $C_i$  1  $\mu$ F

Common  $L_o$  and  $C_o$

$L_o$ in mH	0.64	0.5	0.2	0.1	0.049	0.019	0.009	0.004	0.001	0.000
$C_o$ in $\mu$ F	2.3	3.0	5.5	7.6	10	16	23	39	129	419

The RSM-Ex 01\* has a jack connector where a headset can be connected. Following headsets are approved and allowed to be connected to RSM-Ex 01\*:

- ComCom Ex and additional in-ear plug Serenity SPC Ex
- RSM HS 01 -W
- RSM HS 01 -B

The approved headsets are allowed to connected and disconnected directly inside the Ex-area.

[16] **Test report**

The test results are recorded in the confidential test report IB-18-3-0050 of 2019-01-15.

The test documents are part of the test report and they are listed there.

*Summary of the test results*

The RSM-Ex 01\* fulfills the explosion protection requirements for Group I and Category M2, Group II and Categories 2G and 2D as intrinsically safe equipment.

[17] **Specific conditions of use**

- Do not charge or open the device inside the Ex-area.
- It must be ensured that the maximum input voltage ( $U_m$ ) for the device from the charger between the lines is 6 V.

- The ambient temperature during the charging shall be in the range from 0 °C to +45 °C.
- Only those accessories approved by ecom instruments GmbH may be used.

For using in mining zone only

- The device must be protected against strong impacts for Group I.
- The device must be protected against the constant contact with oils, hydraulic liquids and fats.
- The device must be removed from the Ex-area in case of fire damp.

**[18] Essential health and safety requirements**

In addition to the essential health and safety requirements (EHSRs) covered by the standards listed at item [9], the following are considered relevant to this product, and conformity is demonstrated in the test report:

None

**[19] Drawings and Documents**

The documents are listed in the test report.

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