



Remote Speaker Microphone Series RSM-Ex 01 / RSM 01

Operating Instructions | Bedienungsanleitung | Notice d'utilisation
Istruzioni per l'uso | Instrucciones de uso | Manual de instrucciones

IMPROVE COMMUNICATIONS IN HAZARDOUS AREAS



English..... Page.....3

Deutsch Seite..... 18

Français..... Page.....33

Italiano..... Page.....48

Español..... Página63

Português..... Sida.....78

Content

1. Scope of delivery	4
2. Area of application	4
3. Safety instructions	4
3.1 Faults and damage	5
3.2 Safety regulations (only for RSM-Ex 01).....	5
3.3 Ex – Data ATEX (only for RSM-Ex 01).....	6
3.4 Ex – Data IECEx (only for RSM-Ex 01).....	6
3.5 Ex-Data NEC/CEC (only for RSM 01).....	6
3.6 Entity parameter cable (only for RSM-Ex 01).....	7
3.7 Approved accessory for the headset jack connector (only for RSM-Ex 01)7	
3.8 Precautions	8
3.9 Technical specifications.....	8
4. Operating elements	9
5. Charging	10
6. Service life and battery life	11
7. Switching the product on and off.....	11
8. Hardware reset	12
9. Multi-function button (MFB).....	12
10. SOS button (optional)	12
11. PTT functions	12
12. Telephone mode and phone calls.....	13
13. Mute function	14
14. Channel change mode	14
15. External headset	15
16. Special functions.....	15
17. Cleaning, maintenance and storage	15
18. Repair	16
19. Safety precautions for the integrated battery	16
20. Disposal.....	17
21. Warranty and liability	18

Note: The current operating instructions can be downloaded from the relevant product page at www.ecom-ex.com, or alternatively they can be requested directly from ecom instruments. Further up-to-date information on the RSM-Ex 01 range (tested devices, software versions, accessories, etc....) can be found at the following link: <https://support.ecom-ex.com/public/cat?id=282>

The RSM 01/RSM-EX 01 is subsequently referred to as the ‚product‘ for the remainder of this document.

1. Scope of delivery

- RSM-Ex 01 or RSM 01
- Charging cable
- Battery charger
- Documentation

2. Area of application

Push To Talk (PTT) communication

The RSM-Ex 01 (subsequently referred to as the ‚product‘) was developed for PTT communication. PTT is the designation given to the group call function from the industrial and public safety communication sectors. When using this function, a participant communicates with his/her work group in the following way: Pressing and holding the PTT button opens a voice channel within the group. The person making the call can now speak while holding the button. The group participants now hear the information that is relayed by the caller. When the caller has released the PTT button, it is possible for the other participants in the group to respond to the call by pressing and holding the PTT button until they have finished speaking.

In order to be able to use the PTT function on Android or Windows devices, you will need a PTT application that provides the PTT service, as well as a WLAN, 2G or higher quality data connection.

Telephone calls

When used in combination with a WWAN device, it is possible to use the product to make phone calls. In doing so, half-duplex communication is used, i.e. only the loudspeaker or microphone is active at any time. Full duplex operation is supported when used with an additional headset.

3. Safety instructions

Please read through these operating instructions carefully before starting to use the product!

In the event of any doubt (an unclear translation or printing error), please refer to the English version of the operating instructions.

The following safety instructions contain information and safety regulations that must be observed to ensure safe operation under the described conditions. Failure to follow these instructions and this information can have serious consequences or constitute a violation of the applicable regulations.

3.1 Faults and damage

If there is any reason to suspect that the safety of the unit has been impaired, it must be withdrawn from use and removed immediately from the Ex-area. We recommend that the unit is returned to the manufacturer for the inspection.

The safety of the device may be compromised if for example:

- there is visible damage to the housing
- the unit has been subjected to excessive loads
- the unit has been improperly stored.
- the unit has been damaged in transit.
- unit markings or inscriptions are illegible
- malfunctions occur
- permitted limit values have been exceeded
- minimum distance of 10 cm between the device and ear!



3.2 Safety regulations (only for RSM-Ex 01)

Use of the device assumes that the user observes the conventional safety regulations and has read the certificate in order to eliminate faulty operation of the device.

The following safety regulations are to be observed:

- Do not charge the device inside the Ex-area
- The device should not be opened by the end-user for any reason.
- It must be ensured that the maximum input voltage (U_m) for the device from the charger between the lines is 6V
- 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
- Do not use the device in zones 0 or 20

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

3.3 Ex – Data ATEX (only for RSM-Ex 01)

EU type approval test certificate no.: IBEU18ATEX1124 X

Ex-marking: Ⓢ II 2G Ex ib IIC T4 Gb
 Ⓢ II 2D Ex ib IIIC T135°C Db IP64
 Ⓢ I M2 Ex ib I Mb

Ambient temperature: -20 °C ≤ Ta ≤ +55 °C

3.4 Ex – Data IECEx (only for RSM-Ex 01)

IECEx Certificate of Conformity no.: IECEx IBE 18.0016X

Ex-marking: Ex ib IIC T4 Gb
 Ex ib IIIC T135°C Db IP64
 Ex ib I Mb

Ambient temperature: -20 °C ≤ Ta ≤ +55 °C

3.5 Ex-Data NEC/CEC (only for RSM 01)

SGS Certificate of compliance: SGSNA/19/SUW/00157

Ex-marking: CI I,II,III, Div 1 GRPS A-G, T4, T135 °C
 CI I Zn 1, AEx ib IIC T4 Gb IP64
 CI II Zn 21, AEx ib IIIC T135 °C Db IP64
 CI I, Zn 1, Ex ib IIC T4 Gb IP64
 CI II, Zn 21, Ex ib IIIC T135 °C Db IP64

Ambient temperature: -20 °C ≤ Ta ≤ +55 °C



3.6 Entity parameter cable (only for RSM-Ex 01)

Voc (Peak)	Uo (Peak)	= 4.2 V
Isc	Io	= 22.3 mA
Po	Po	= 23.5 mW
Vmax	Ui	= 4.2 V
Ci	Ci	= 1 μ F
Li	Li	= 1 μ H
Pi	Pi	= 400 mW
I _{max}	li	= 300 mA

Lo (La) and Co (Ca):

Lo (La)[mH]	0.64	0.5	0.2	0.1	0.049	0.019	0.009	0.004	0.001	0.000
Co(Ca) [μ F]	2.3	3.0	5.5	7.6	10	16	23	39	129	419

3.7 Approved accessory for the headset jack connector (only for RSM-Ex 01)

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 be connected and disconnected directly inside the Ex-area

Note:

Currently available accessory items that can be connected to the RSM-EX 01 can be found at www.ecom-ex.com.

3.8 Precautions

The product is equipped with a powerful audio driver and a loudspeaker. Listening at excessive volumes can cause irreparable damage to your hearing. Note: 103dB level at 10 cm from the device!

The device should not be used in continuous operation!

To avoid hearing damage, it must be noted that when operated directly near the ear, the device can exceed the noise limit values in extreme cases.

Therefore, we recommend that a minimum distance of 10 cm is maintained between the device and your ear at all times.

3.9 Technical specifications

Operating temperature: -20 °C to +55 °C

Storage temperature: Storage temperature during transport:
-20 °C to +40 °C.

Recommended temperature for long-term storage:
approx. 23 °C.

Dimensions: 121 x 80 x 28 mm; (with clip: 121 x 80 x 38 mm)

Weight: 230 g

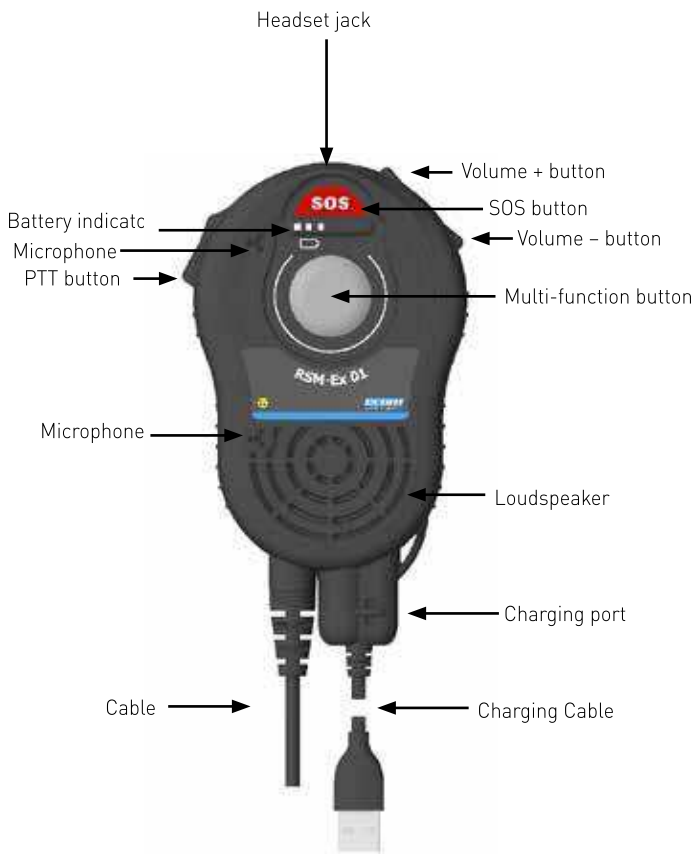
Max. charging voltage: 5.5 V

Max. charging current: 1000 mA

Battery capacity: at least 1960 mAh

Protection class: IP 65 / IP67

4. Operating elements



Function buttons:

PTT button -> to initiate a PTT group call

Volume +/- button -> volume adjustment

Multi-function button (MFB) -> accept, hang up and reject phone calls (+ special functions) SOS button: Emergency call function (optional, refer to the information on page 11)

Visual display elements:

Red, yellow and green LEDs to indicate battery capacity and operating states

Acoustic output and recording devices:

Microphone, Loudspeaker

Connectivity:

3.5 mm headset jack, Magnetic charging socket, Cable

5. Charging

Charging the product is only permitted outside hazardous areas while observing the following ambient temperature range:

Permitted charging temperature range: 0 °C to 45 °C

The product is equipped with an integrated, non-removable battery.

The battery installed in the product is not fully charged. We recommend fully charging the battery before using the product for the first time. The full capacity of the battery is reached after 3-4 complete charge/discharge cycles. The product must be charged at least once every six months to a battery level of 50 percent. If the product has been discharged, it may take several minutes for the charging function to be displayed.

Insert the USB connector into the power supply unit and plug this into a power socket. Then connect the charging cable to the product's charging port.

The battery indicator informs the user about the progress of the charging function.

Battery capacity	Battery indicator
0 % - 19 %	Red LED illuminates
20 % - 99 %	Yellow LED illuminates
100 %	Green LED illuminates

6. Service life and battery life

Overview of the product's possible service life when using different user profiles and volume settings

Service life in % with typical user profiles Talk / listen / stand-by	Extremely loud areas with a sound level above 100 dB	Very loud areas with a sound level between 84 and 100 dB	Loud areas with a sound level up to 84 dB
5 / 5 / 90	-> 47 h	-> 60 h	-> 78 h
25 / 25 / 50	-> 16 h	-> 27 h	-> 45 h
50 / 50 / 0	-> 9 h	-> 16 h	-> 30 h
	Full sound level (8/8)*	Very high sound level (4/8)*	High sound level (2/8)*
	*8 different volume levels are possible.		
Stand-by: approx. 83 hours when the headset jack is connected			

The battery indicator informs the user about the remaining battery capacity.

Battery capacity	Battery indicator
100 % - 40 %	Green LED illuminates
39 % - 20 %	Yellow LED illuminates
19 % - 0 %	Red LED flashes

7. Switching the product on and off

Switching on:

Insert the jack plug into a terminal. When the plug has been inserted, all three LEDs of the battery indicator illuminate to signal the product has been switched on successfully. The „Power On” function is also indicated via an audible tone.

Please note that the product is always in a ‚switched on state’ when charging.

Switching off:

Remove the jack plug from the terminal. When the plug has been removed, all three LEDs of the battery indicator will go out to signal the product has been switched off successfully.

8. Hardware reset

To reset the product during operation, press the multi-function button (MFB) and the „-“ volume button until the battery indicator LED goes out. When the buttons are released, the product will restart.

9. Multi-function button (MFB)

Incoming calls	Press the MFB briefly, (max. 1 second)	Accept a call
	Press the MFB x2 briefly within 1 second	Reject a call
Active calls	Press the MFB long, (min. 1 second)	End a call

10. SOS button (optional)

An emergency call can be initiated via the SOS button.

Note:

The function of the SOS button can only be used with „Smart-Ex 02“ and „Ex Handy 10“, as well as future generations smartphones and mobile phones made by ecom instruments GmbH. The SOS function must be integrated in the respective application.

11. PTT functions

PTT transmitter

To initiate a PTT call, press and hold the PTT button.

After pressing the PTT button, the loudspeaker is briefly activated to inform the caller that a channel has been activated for their call.

Note: This function must be supported by the associated application. When this signal is emitted, the channel is available for making a call.

The product's loudspeaker remains deactivated and is only activated for an incoming PTT call.

PTT receiver

An incoming call will automatically activate the loudspeaker.

12. Telephone mode and phone calls

Outgoing phone call

In order to make an outgoing phone call, the telephone mode must first be activated on the product. This is implemented by pressing the MFB button for at least 3 seconds. When activation has been successful, „Phone Mode ON“ will be displayed and the red LED of the battery indicator will illuminate permanently. When the phone call has ended, the telephone mode must be deactivated again in order to reactivate the PTT function. To do this, the MFB button must be pressed for at least 2 seconds. When deactivation has been successful, „Phone Mode OFF“ will be displayed and the red LED will go out. The PTT button must be pressed to speak when the phone call is active. The product's loudspeaker is deactivated when doing this and will only be reactivated when the PTT button has been released (half-duplex mode).

When using a headset, the PTT button does not need to be pressed to speak during an active call, as the product will automatically switch to full-duplex mode here.

Accepting an incoming phone call

To receive an incoming phone call, the telephone mode must be activated first, then the „multi-function button“ must be pressed briefly to accept the call.

Ending a phone call by the user

A phone call is ended by pressing the „multi-function button“ (<1 second). The telephone mode must be deactivated manually.

Ending a phone call by the caller

If a phone call is ended by the caller, the person called must deactivate the telephone mode manually by pressing the „Multi-function button“ (>3 seconds).

Note:

The red LED illuminates permanently when the telephone mode is active.

13. Mute function**Activating the mute function:**

To activate the mute function, press and hold the volume down button for approx. 4 seconds.

After successful activation, „Mute On“ will be displayed and the yellow and green LEDs will flash.

Deactivating the mute function:

To deactivate the mute function, press and hold the „+“ volume button.

After successful deactivation, „Mute Off“ will be displayed and the yellow and green LEDs will go out.

Note:

The volume of the product can be set at 8 different levels, with the lowest level corresponding to the “Mute” function.

14. Channel change mode**Note:**

The channel change mode is only possible if the product is operated on a Smart-Ex 02, Ex-Handy 10 or successor model and is supported by the APP provider.

Activating the channel change mode:

The channel mode is activated by pressing the volume up button for 4 seconds. An acoustic signal is emitted after activation: „Channel Mode on“.

Deactivating the channel change mode:

The channel mode is deactivated by pressing the volume up button for 4 seconds. An acoustic signal is emitted after deactivation: „Channel Mode off“.

To switch up a channel:

Press the volume + button

To switch down a channel:

Press the volume - button

Visual display of the channel change mode:

When the channel change mode is active, the green and yellow LEDs will flash.

15. External headset

The product features a headset jack for connecting an external headset. The product automatically detects when an external headset is connected and it disables both the loudspeaker and microphone on the product. After inserting an external headset, the product will switch to its full-duplex mode.

Warning:

Please refer to the safety instructions when connecting external headsets.

16. Special functions

Ambient Noise Suppression:

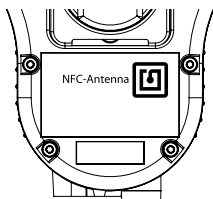
The „Ambient noise suppression“ function is used to compensate for loud ambient noise.

Noise Cancellation:

The built-in noise cancellation function eliminates noise from the input signal.

NFC Chip:

The chip is installed at the rear of the product. The NFC chip can be used for various applications.



17. Cleaning, maintenance and storage

- Only use a damp cloth when cleaning the product.
- Do not use any solvent-based cleaners or scouring agents when cleaning.
- The product must not be stored at temperatures above or below the permissible range of -20 °C to +30 °C.

18. Repair

Repairs may only be carried out by ecom instruments GmbH or by service centers authorized by ecom instruments GmbH, as the safety of the product must be checked after conducting the repair.

The repair request form can be downloaded under the Service section at www.ecom-ex.com.

19. Safety precautions for the integrated battery

Damaged devices and chargers should no longer be used and should be sent to ecom instruments GmbH for inspection. We would like to draw your attention here to the transport regulations for dangerous goods, which every consignor is obligated to comply with for devices with integrated rechargeable batteries or separate rechargeable batteries.

Note:

- Extreme temperatures can have an adverse effect on charging the battery module.
- Do not throw the product into a fire.
- Dispose of the product in accordance with local regulations and do not discard it along with normal household waste.

The product is equipped with a high quality lithium-ion rechargeable battery. These batteries have numerous advantages in everyday use, such as a low weight and high capacity in a nevertheless compact construction. Although the battery cells have virtually no memory effect, they are still subjected to a natural aging process that has an impact on their function. Modern batteries today have a lifespan of around 500 charge cycles, which, when used daily, corresponds to a service life of approximately 2 years. The aging process increases rapidly after this period, which means that the battery cells are deemed technically defective after 500 charge cycles.

Moreover, the battery cells could expand and cause irreparable damage to your product in a worst case scenario.

Note:

The rechargeable battery used in this product poses a fire hazard and can cause chemical injuries if it is used improperly. Neither the rechargeable battery nor the battery cells should be opened or disassembled.

Please take care to ensure the rechargeable battery is not burned or exposed to temperatures exceeding 100 °C.


20. Disposal

Old electrical and electronic devices from ecom instruments GmbH are supplied for disposal at our expense and disposed of free of charge in accordance with European Directive 2012/19/EU. Please comply with local regulations when disposing of electronic products. The costs associated with returning devices to ecom instruments GmbH are to be borne by the sender. In accordance with Article 1, Section 18 and Article 2 of the Act Revising the Law of Waste-Related Product Responsibility for Batteries and Accumulators dated 25 June 2009, we are obligated to provide the following information. The device contains lithium batteries. Depleted batteries should never be disposed of along with normal or household waste.

Old batteries can contain harmful substances that are hazardous to health and damaging to the environment. Please return old devices. Return is free of charge and required by law. Please only dispose of discharged batteries in the designated containers and tape the terminals of lithium batteries.

Note: The batteries used in this device pose a fire hazard and can cause chemical injuries if used improperly. Neither the battery nor the battery cells should be opened or disassembled and they should not be burned or exposed to temperatures exceeding 55 °C. The disposal regulations specified above are also applicable for old devices. All batteries and rechargeable batteries can be recycled. Precious raw materials such as iron, zinc and nickel can therefore be reused.



The symbol  has the following meaning: Old electrical and electronic devices should not be disposed of along with normal or household waste. When sending any batteries, please observe IATA regulations. This provision must be observed for permanently integrated batteries!

21. Warranty and liability

The warranty for this product follows the General Terms & Conditions of Delivery & Payment of ecom instruments GmbH, which are available at www.ecom-ex.com or can be obtained directly from the manufacturer. This warranty may be extended through the optional Service Level Agreement.

Copyright© 2018 ecom instruments GmbH.

The contents of this document, either in part or in their entirety, may not be reproduced, forwarded, distributed or saved in any way without ecom instruments GmbH prior written consent.

The contents of this document are presented as they currently exist. ecom instruments GmbH does not provide any express or tacit guarantee for the correctness or completeness of the contents of this document, including, but not restricted to, the tacit guarantee of market suitability or fitness for a specific purpose unless applicable laws or court decisions make liability mandatory. ecom instruments GmbH reserves the right to make changes to this document or to withdraw it any time without prior notice.

Copyright© 2018 ecom instruments GmbH.

Der Inhalt dieses Dokuments darf ohne vorherige schriftliche Genehmigung durch die ecom instruments GmbH in keiner Form, weder ganz noch teilweise vervielfältigt, weitergegeben, verbreitet oder gespeichert werden.

Der Inhalt dieses Dokuments wird so präsentiert, wie er aktuell vorliegt. Die ecom instruments GmbH übernimmt weder ausdrücklich noch stillschweigend irgendeine Gewährleistung für die Richtigkeit oder Vollständigkeit des Inhalts dieses Dokuments, einschließlich, aber nicht beschränkt auf die stillschweigende Garantie der Markttauglichkeit und der Eignung für einen bestimmten Zweck, es sei denn, anwendbare Gesetze oder Rechtsprechungen schreiben zwingend eine Haftung vor. Die ecom instruments GmbH behält sich das Recht vor, jederzeit ohne vorherige Ankündigung Änderungen an diesem Dokument vorzunehmen oder das Dokument zurückzuziehen.

MAS-0059C | 09/2019

WEEE-Reg.-Nr. DE 934 99306

Änderungen vorbehalten! Subject to change without notice.

ecom instruments GmbH | Industriestraße 2 | 97959 Assamstadt | Germany

Phone +49 62 94 42 24 0 | Fax +49 62 94 42 24 100

sales@ecom-ex.com | www.ecom-ex.com