



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

Certificate No.: IECEx KDB 19.0002

Issue No: 0

Certificate history:

Issue No. 0 (2019-02-28)

Status: **Current**

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Date of Issue: **2019-02-28**

Applicant: **2RHP Sp. z o.o.**
ul. Chorzowska 37
41-709 Ruda Śląska
Poland

Equipment: **M1 Base**

Optional accessory:

Type of Protection: **Equipment protection by intrinsic safety "i" and inherently safe optical radiation "op is"**

Marking:

Ex ia op is I Ma

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

mgr inż. Piotr Madej

Position:

Head of ExCB

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

Certificate issued by:

Główny Instytut Górnictwa, Kopalnia Doświadczalna "BARBARA"
(Central Mining Institute Experimental Mine "Barbara")
ul. Podleska 72
43-190 Mikołów
Poland





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Manufacturer: **2RHP Sp. z o.o.**
ul. Chorzowska 37
41-709 Ruda Śląska
Poland

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:

IEC 60079-0 : 2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

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

IEC 60079-28 : 2015 Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
Edition:2

*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:

[PL/KDB/ExTR19.0002/00](#)

Quality Assessment Report:

[PL/OBAC/QAR18.0004/00](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The M1 Base is a telecommunications device used to make voice calls between the base operator and members of the rescue team equipped with personal PC 1.0 Personal Communicators, using a backbone network based on REP 1.0 repeaters. It is also capable of making connections between the base operator and the surface staff.

The M1 base also allows for wireless data reception in telemetry mode from any team members equipped with a 2.4 GHz radio and all devices connected to repeaters.

Connection is also possible between the Base M1 and a computer / tablet with a Wi-Fi module and a dedicated Resys application installed. This allows visualization of data provided by the M1 Base. e.g. the location of team members on the mine plan, condition of system devices, alarm conditions, etc.

The basic communication interfaces are:

- The main radio TxRx880/840
- Media converter MCInt - fibre optic connection to the surface or alternatively as a wired connection to the network of repeaters
- MCExt output - for connecting an external media converter type MC1.0, or alternatively as a connection to a network of repeaters or a connection to the surface
- Wi-Fi module - a radio connection with a computer located underground.

The M1 base is equipped with the following hardware:

1. Loudspeaker
2. Microphone
3. Keyboard
4. Graphic display
5. Antennas
6. The following sockets:
 - MC Int optical / fibre optic
 - MC Ext - for connecting an external media converter type MC1.0
 - Microphone
 - Headphone
 - Battery power supply
 - Antenna (ANT1, ANT2)

Technical parameters are included in attachment.

SPECIFIC CONDITIONS OF USE: NO

Annex:

[CoC_KDB_19_0002_00_Attachment.pdf](#)

Data Sheet

Technical parameters:

Ambient temperature: $0^{\circ}\text{C} \div 50^{\circ}\text{C}$
Ingress protection: IP 54

Intrinsically safe parameters:

Output parameters:

$U_0 = 4,2 \text{ V}$

$I_0 = 5,3 \text{ A}$

$P_0 = 3,57 \text{ W}$

Lo [mH]	0,089	0,05	0,02	0,01	0,005	0,002	0,001
Co [μF]	370	700	1000	1000	1000	1000	1000