





Mining And Surface Certification (Pty) Ltd

2015/021934/07

IN TERMS OF REGULATION 21.17.2 OF THE MINERALS ACT (INCORPORATION THE MINE HEALTH AND SAFETY ACT) AND REGULATION 9 (1) OF THE ELECTRICAL MACHINERY REGULATIONS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT

IA CERTIFICATE	MASC M/20-8600X	Issue	0
Issue Date	11 January 2021	Expiry Date	11 January 2024
*Based on Certificate No	IECEx EPS 19.0114X	Issue / Variations / Amendment	2
Requested by	Pepperl+Fuchs (Pty) Ltd 1 st fl Zerwick Forum, 8 Glen Eagle Office Park, Cnr Monument Rd and Braambos St, Glen Erasmia, Kempton Park 1619, South Africa		
Manufacturer	ecom Instruments GmbH Industriestrasse 2 97959 Assamstadt, Germany		
Description	The intrinsically safe Smart Phone of type Smart-Ex 02 *** M is a communication device intended for use in mines susceptible to firedamp. The device provides additional features such as camera, GPS, NFC, acceleration sensor, WiFi, Bluetooth, vibration motor, headphone connector, magnetic sensor and flash-light. Different integrated antennas can be used for the usual cellular systems. The device is equipped with an exchangeable Li-Ion battery unit. Charging and wired data transfer is done via the magnetic USB-connector in ordinary locations only. *See base certificate for technical information.		
Equipment	Intrinsically Safe Smart Phone	Type	Smart-Ex 02 *** M
MARKING: Original marking as per certificate * remains applicable. IA number to be added.	Type Ex Marking IA Number Warnings	Intrinsically Safe Smart Phone Smart-Ex 02 *** M Ex ia op is I Ma IP64 MASC M/20-8600X See Base Certificate * and original marking	
Quality Assurance report (QAR) / Notification (QAN):	DE/PTB/QAR06.0008/13		
Compliance:	The equipment as described above has been allocated the rating <u>Explosion Protected</u> utilizing the SANS/IEC Standards: <ul style="list-style-type: none"> SANS (IEC) 60079-0 2019 Explosive atmospheres – Part 0: General requirements SANS (IEC) 60079-11 2012 Explosive atmospheres – Part 11: Equipment protection by intrinsic safety “i” SANS (IEC) 60079-28 2016 Explosive atmospheres – Part 15: Protection of equipment and transmission systems using optical radiation. 		
Special conditions of safe use “X”:	<ul style="list-style-type: none"> See “Annex A” below 		
Conditions of manufacture:	<ul style="list-style-type: none"> See “Annex A” below 		
 C Welthagen TECHNICAL SPECIALIST		 D.P Visser TECHNICAL SPECIALIST	

This certificate covers all units sold as long as the QAR/QAN remains valid.
According to the relevant requirements of the MHS Act and the OHS Act, production units of explosion protected equipment are required to comply with third party quality assurance (an approved mark scheme or batch testing by an accredited test laboratory).

Apparatus in hazardous locations is subject to the following provisions as applicable, which shall be adhered to:
SANS 10086 requirements;
Any conditions mentioned in the above report
Any restrictions and conditions enforced by the chief inspector of mines or chief inspector of factories
Any relevant requirements of the MHS Act.

/ . ANNEX A...

This certificate may only be reproduced in full.
This certificate is not transferable and remains the property of the issuing body

Mining And Surface Certification (Pty) Ltd
Unit 5 Lelyta Park, 45 Jurg Ave, Hennospark Ext 87
Centurion, 0157

IA CERTIFICATE: MASC M/20-8600X

I.S Smart Phone

ANNEX A

This document is based on and must be read in conjunction with certificate IECEX EPS 19.0114X	
Description (According to Base Certificate *)	
"Refer to description in Base Certificate * (and any applicable schedules/issues/variatioins)."	
Standard compliance	See Base Certificate *
Special conditions of safe use ("X")	<ul style="list-style-type: none"> • See base certificate
Conditions of manufacture	<ul style="list-style-type: none"> • None
Conditions of Certification	<ul style="list-style-type: none"> • This IA Certificate covers all units sold from the date of this document to the expiry date of this certificate. • As per ARP 0108 a maximum three yearly review is required on this IA Certificate (expiry is determined as per the QAR/QAN/QMS expiry date). • The apparatus must be additionally marked with the MASC marking details above. • This approval only covers the equipment as certified above and does not include any scheduled additions or variations / amendments / new issues to the certificate(s), made after the above date. • The equipment does not need to be re-tested when used on the conditions and with such restrictions as prescribed by the certificate on which this IA Certificate is based and any other conditions in this IA Certificate. • The certification on which this IA Certificate is based must remain valid. • The extent of the requirements in the ARP 0108 (or regulations), SANS 10108 and any other applicable regulations on the certification of the equipment must remain unchanged. • The Ex quality assurance notification/report for the equipment must remain valid.
Conclusion:	<ul style="list-style-type: none"> • From the above and the selective examination of the documentation, nothing contrary to the requirements of the applicable standards was found, provided that the equipment / component is used as described in the above document / certificate and according to the MASC conditions below. A MASC IA certificate is issued based on the work done as per the Base Certificate *. • The routine tests for production units according to the Base Certificate * must be complied with (if applicable).

This document is issued based on Mining And Surface Certification's Standard Contract terms and conditions available on request.

While every endeavour is made to ensure that a test / assessment / inspection is representative and accurately performed, and that a report / certificate is accurate in the quoted results and conclusions drawn from the test / assessment / inspection, MASC or its directors/employees shall in no way be liable for any error made in carrying out the test / assessment or for any erroneous statement, whether in fact or in opinion, contained in a report / certificate issued pursuant to a test / assessment / inspection.

MASC takes no responsibility for any non-conformances, exclusions or any results / assessments / inspections not in compliance with the standards. By marking the equipment in accordance with the documentation / standard, the manufacturer / applicant attests on his own responsibility that the equipment / installation has been designed and constructed in accordance with the applicable requirements of the relevant standards and documentation, that the routine verifications / routine tests have been correctly completed and the equipment / installation complies with the documentation and standard(s).

This document is only for use and application in South Africa. It is issued based on National interpretations and accepted practices



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx EPS 19.0114X** Page 1 of 4 Certificate history:
Status: **Current** Issue No: 2 Issue 1 (2020-05-15)
Issue 0 (2019-12-12)
Date of Issue: 2020-08-18
Applicant: **Pepperl+Fuchs SE**
Lilienthalstrasse 200
68307 Mannheim
Germany
Equipment: **Intrinsically safe smartphone Smart-Ex 02 *** M**
Optional accessory:
Type of Protection: **intrinsic safety "i"**
Marking: Ex ia op is I Ma IP64

Approved for issue on behalf of the IECEx
Certification Body:

Holger Schaffer

Position:

Certification Manager

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 www.iecex.com or use of this QR Code.



Certificate issued by:

Bureau Veritas Consumer Products Services Germany GmbH
Businesspark A96
86842 Türkheim
Germany





IECEx Certificate of Conformity

Certificate No.: **IECEx EPS 19.0114X**

Page 2 of 4

Date of issue: 2020-08-18

Issue No: 2

Manufacturer: **ecom Instruments GmbH**
Industriestrasse 2
97959 Assamstadt
Germany

Additional
manufacturing
locations:

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 equipment 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 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/EPS/ExTR19.0116/02](#)

Quality Assessment Report:

[DE/PTB/QAR06.0008/13](#)



IECEx Certificate of Conformity

Certificate No.: **IECEx EPS 19.0114X**

Page 3 of 4

Date of issue: 2020-08-18

Issue No: 2

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The intrinsically safe Smart Phone of type Smart-Ex 02 *** M is a communication device intended for use in mines susceptible to firedamp. The device provides additional features such as camera, GPS, NFC, acceleration sensor, WiFi, Bluetooth, vibration motor, headphone connector, magnetic sensor and flash-light. Different integrated antennas can be used for the usual cellular systems. The device is equipped with an exchangeable Li-Ion battery unit. Charging and wired data transfer is done via the magnetic USB-connector in ordinary locations only.

Electrical data:

Supply: Two rechargeable built-in Li-Ion batteries in parallel
Battery pack Ex-BP S02 nominal data: 3.7 V, 4400 mAh, 16.28 Wh or
Battery pack Ex-BP S02C nominal data: 3.7 V, 3920 mAh, 14.5 Wh

Charging and
Wired data transfer: Um = 6V, outside of classified hazardous locations only

SPECIFIC CONDITIONS OF USE: YES as shown below:

Ambient temperature range: $0^{\circ}\text{C} \leq T_{\text{amb}} \leq +50^{\circ}\text{C}$

The battery pack is only allowed to be charged and replaced outside of the classified hazardous location.

It must be ensured that the power supply for charging fulfills the requirements for SELV or PELV and $U_m = 6\text{V}$.

The Battery-Cover for card and battery-pack access must be mounted and screwed tight before entering the hazardous location.

The device has to be protected against high energy impacts.

The device shall not be used in close proximity to processes producing high electrostatic charges.

The device shall not be repaired or dismantled (except the Battery-Cover in ordinary locations).

The device shall not be used where chemical agents such as oil or grease are likely to come into contact with the equipment.

Before entering a hazardous location the USB cover must be closed tight and shall not be opened again until the end user is in a safe area.

It is allowed to use the 3.5mm Audio Plug in the hazardous locations for connections to certified accessory meeting the following entity parameters:

$U_i = 4.2\text{ V}$	$I_i = 50\text{ mA}$	$P_i = 100\text{ mW}$	$C_i = 0.1\text{ }\mu\text{F}$	$L_i = 1\text{ }\mu\text{H}$
$U_o = 4.2\text{ V}$	$I_o = 0.35\text{ A}$	$P_o = 0.5\text{ W}$	$C_o = 3\text{ }\mu\text{F}$	$L_o = 440\text{ }\mu\text{H}$



IECEx Certificate of Conformity

Certificate No.: **IECEx EPS 19.0114X**

Page 4 of 4

Date of issue: 2020-08-18

Issue No: 2

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Parameter for Audio Plug changed.