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 23.0021X**

Certificate history:

Status: **Current**

Issue No: 0

Date of Issue: 2023-11-28

Applicant: **Pepperl+Fuchs SE**
Lilienthalstrasse 200
68307 Mannheim
Germany

Equipment: **Intrinsically safe smartphone, types: Smart-Ex 03 *** DZ1 and Smart-Ex 03 *** DZ2**

Optional accessory:

Type of Protection: **intrinsic safey "i"**

Marking: Smart-Ex *** DZ1:

Ex ia IIC T4 Gb

Ex ia IIIC T135 °C Db

Smart-Ex *** DZ2:

Ex ic IIC T4 Gc

Ex ic IIIC T135 °C Dc

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

Position: **Head of Certification**

Signature:
(for printed version)

Date:
(for printed version)

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

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Certificate No.: **IECEx EPS 23.0021X**

Date of issue: 2023-11-28 Issue No: 0

Manufacturer: **Pepperl+Fuchs SE**
Lilienthalstrasse 200
68307 Mannheim
Germany

Manufacturing locations: **ECOM Instruments GmbH**
Industriestrasse 2
97959 Assamstadt
Germany

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 60079-11:2023 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:7.0

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

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/ExTR23.0025/00

Quality Assessment Report:

DE/PTB/QAR06.0008/18

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The intrinsically safe smartphone of type Smart-Ex 03 *** DZ1 and type Smart-Ex 03 *** DZ2 is a communication device intended for use in explosive hazardous areas. The device is equipped with a replaceable battery pack unit type Ex-BP S03.

Refer also to attachment.

SPECIFIC CONDITIONS OF USE: YES as shown below:
Refer to attachment.

Annex:

Ecom_22TH0346_Smart-Phone 03_IECEx Attachment_1.pdf

Annex to: IECEx EPS 23.0021X Issue No. 0

Applicant: Pepperl+Fuchs SE

Apparatus: Smart-Ex 03 *** DZ1
Smart-Ex 03 *** DZ2

Description of equipment (Model DZ1):

The intrinsically safe smartphone of type Smart-Ex 03 *** DZ1 is a communication device intended for use in explosive hazardous areas. The device is equipped with a replaceable battery pack unit type Ex-BP S03.

Ambient temperature range: -20 °C ... +60 °C

Electrical interface data for use in hazardous areas:

USB-C				
U_o = 4.2 V	I_o = 0.8 A	P_o = 0.6 W	C_o = 2 µF	L_o = 8 µH
U_i = 4.4 V	I_i = 1.5 A	P_i = not relevant	C_i = 15 µF	L_i = 2 µH

Audio				
U_o = 3.6 V	I_o = 0.290 A	P_o = 0.210 W	C_o = 2.6 µF	L_o = 730 µH
U_i = 4.5 V	I_i = 0.030 A	P_i = not relevant	C_i = 0 µF	L_i = 0 µH

Optional Accessories:

CR-Ex S03	cradle with belt or spring clip
LC-Ex S03	leather case with belt or spring clip
LH-Ex S03	leather holster
RL ID01	retractable lanyard
EXT-C2LCOIL	coil tether
Mini QD Loop	mini disconnect clip with loop
ST 02	stylus pen without tether
ST 01	tether for stylus pen

Reference number (Model DZ1): 22TH0346

Special conditions for safe use (Model DZ1):

The device shall be protected against high energy impacts.

When used in group IIC or IIB environments, the device shall not be used in close proximity to processes producing high electrostatic charges.

Charging, SIM-card replacement and battery pack replacement is only allowed in ordinary (non-hazardous) areas.

The device may only be charged in a temperature range of 0°C to 45 °C.

Charging and wired data-transfer via the USB-C interface is limited to a maximum voltageof 6 V (U_m) and a current of 10 A (I_m).

It must be ensured that the power plug/supply used for charging and wired data connections via the USB-C port is a non-shock hazard extra low voltage equipment such as SELV, PELV or ES1 as per IEC 62368-1 (former IEC 60950-1) or equivalent.

It must be ensured that the battery cover is mounted properly before entering the hazardous location so that the IP rating of the device is not affected.

(continuation see following page)

Special conditions for safe use (Model DZ1): (continuation)

Intrinsically safe equipment for use in the hazardous location connected to the audio jack or USB-C interface must fulfill one of the following:

- The combination of the intrinsically safe equipment and the Smart-Ex 03 *** DZ1 must be assessed, and the certificate of the equipment must allow the connection to the Smart-Ex 03 *** DZ1.
- The equipment entity parameter must match with the Smart-Ex 03 *** DZ1 entity parameter as indicated above.

The following spare parts are allowed to be replaced by the end user in ordinary non-hazardous locations:
a) USB-C Cover b) Audio Jack door c) Battery cover / battery pack

Repairs are only to be conducted by the manufacturer or an authorized service center.

Description of equipment (Model DZ2):

The intrinsically safe smartphone of type Smart-Ex 03 *** DZ2 is a communication device intended for use in explosive hazardous areas. The device is equipped with a replaceable battery pack unit type Ex-BP S03.

Ambient temperature range: -20 °C ... +60 °C

Electrical interface data for use in hazardous areas:

USB-C				
U_o = 4.2 V	I_o = 0.8 A	P_o = 0.6 W	C_o = 7 µF	L_o = 18 µH
U_i = 4.4 V	I_i = 1.5 A	P_i = not relevant	C_i = 15 µF	L_i = 2 µH

Audio				
U_o = 3.6 V	I_o = 0.290 A	P_o = 0.210 W	C_o = 3.9 µF	L_o = 1100 µH
U_i = 4.5 V	I_i = 0.030 A	P_i = not relevant	C_i = 0 µF	L_i = 0 µH

Optional Accessories:

CR-Ex S03	cradle with belt or spring clip
LC-Ex S03	leather case with belt or spring clip
LH-Ex S03	leather holster
RL ID01	retractable lanyard
EXT-C2LCOIL	coil tether
Mini QD Loop	mini disconnect clip with loop
ST 02	stylus pen without tether
ST 01	tether for stylus pen

Reference number (Model DZ2): 22TH0346

Special conditions for safe use (Model DZ2):

The device shall be protected against high energy impacts.

When used in group IIC or IIB environments, the device shall not be used in close proximity to processes producing high electrostatic charges.

Charging, SIM-card replacement and battery pack replacement is only allowed in ordinary (non-hazardous) areas.

The device may only be charged in a temperature range of 0°C to 45 °C.

Charging and wired data-transfer via the USB-C interface is limited to a maximum voltageof 6 V (U_m) and a current of 10 A (I_m).

It must be ensured that the power plug/supply used for charging and wired data connections via the USB-C port is a non-shock hazard extra low voltage equipment such as SELV, PELV or ES1 as per IEC 62368-1 (former IEC 60950-1) or equivalent.

It must be ensured that the battery cover is mounted properly before entering the hazardous location so that the IP rating of the device is not affected.

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Special conditions for safe use (Model DZ2): (continuation)

Intrinsically safe equipment for use in the hazardous location connected to the audio jack or USB-C interface must fulfill one of the following:

- The combination of the intrinsically safe equipment and the Smart-Ex 03 *** DZ2 must be assessed, and the certificate of the equipment must allow the connection to the Smart-Ex 03 *** DZ2.
- The equipment entity parameter must match with the Smart-Ex 03 *** DZ2 entity parameter as indicated above.

The following spare parts are allowed to be replaced by the end user in ordinary non-hazardous locations:
a) USB-C Cover b) Audio Jack door c) Battery cover / battery pack

Repairs are only to be conducted by the manufacturer or an authorized service center.

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