SABS

APPROVED INSPECTION AUTHORITY
IN TERMS OF R10.1 OF MINES AND SAFETY ACT AND/OR
ELECTRICAL MACHINERY REGULATIONS 9(2)
OF THE OCCUPATIONAL HEALTH AND SAFETY ACT

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Germany

IA CERTIFICATE: SABS S/23-0834X

Date: 31 August 2023

IS540.1 INTRINSICALLY SAFE SMARTPHONE

Expiry Date: August 2026

DESCRIPTION

According to IECEx Certificate of Conformity No: IECEx EPS 22.0076X

Equipment and systems covered this certificate are as follows:

The intrinsically safe 5G smartphone IS540.1 for Zone 1/21 is equipped with a 6-inch full HD display, supports multiple frequency bands and also NFC, Bluetooth 5.2 and Wi-Fi 6. The high-end Qualcomm chipset ensures fast processing for the most demanding industrial applications such as predictive maintenance. The 16-pin ISM interface provides a secure connection for audio accessories, barcode scanner or other add-ons. Other advantages include the MP main camara, an amplified loudspeaker, a replaceable 4400 mAh battery and programmable buttons (for PoC/PTT/lone worker protection/SOS)

Electrical data:

Power supply: Changeable Li-Ion Polymer Battery

Interface:

The device has two charging contacts that allow the device to be charged outside hazardous areas via an approved charging adapter. The contacts are intrinsically safe for gas and dust.

Furthermore, the device has an USB-C interface for charging and data transmission outside hazardous areas. It is covered by an IP plugger and is not allowed to be opened in hazardous areas.

The ISM interface of the IS540.1 can be used within hazardous areas with approved headsets, Remote Speaker Microphones (RSM) and add-ons, making the smartphone a multifunctional equipment for industrial applications. For ISM interface use, the i.safe MOBILE Headsets IS-HS2A.1, IS-HDHS1x.1 and the PTT Button IS-PTTB1A.1 or approved, intrinsically safe accessories may be used, which comply with connection parameters of the ISM interface according to document 1058AD04. If the ISM interface is not used, it must be securely closed by the cover provided for this purpose.

Headset variants IS-HDS1x. 1:

Name:	Variant:
IS-HDHS1A.1	Headband
IS-HDHS1B.1	Neckband

For charging and wired data transmission only i.safe MOBILE approved accessories may be used. This ensures U_m = 5.88V.

The microSD cards IS-SD164.1 and IS-SD1128.1 may be used in the corresponding slot in the hazardous area. Alternatively, the SD card port has the following intrinsic safety parameters:

Uo = 4.35 V
Co = 80 µF
Lo = 1 µH

A commercially available microSD card may be used in the corresponding slot in potentially explosive atmospheres. The internal electrical capacitance and inductance are negligible, respectively corresponding to the intrinsically safe connection parameters.

Nano-SIM cards which comply with the following intrinsic safety entity parameters, may be used in the corresponding slots in the hazardous area:

Uo = 4.35 V
Co = 80 µF
Lo = 1 µH

A commercially available nano-SIM card may be be used in the corresponding slot in potentially explosive atmosphers. The internal electrical capacitance and inductance are negligible, respectively correspond to the intrinsically safe connection parameters.

MARKING

Supplied by: i.safe MOBILE GmbH
IS540.1 Intrinsically Safe Smartphone
IA No: SABS S/23-0834X
Ex ib IIC T4 Gb
Ex ib IIIC T135°C Db
Serial No: ----------

X - SPECIFIC CONDITIONS OF USE

- The battery may be charged and replaced outside explosion hazardous areas only.
- The device must be protected form impacts with high impact energy, against excessive UV light emission and high electrostatic charge processes.
- The cover for USB-C and ISM interface must be securely closed inside explosion hazardous areas.
- The permitted ambient temperature range is -20 °C to +55 °C

Compliance:

The units as described above and examined in SABS test report no: EPT-230830-00034 are hereby certified "Explosion Protected Ex ib IIC T4 Gb and Ex ib IIIC T135°C Db " and is suitable for use in hazardous locations as stated below, as determined during inspections conducted in accordance with the relevant requirements of SANS Standards:

- **SANS 60079-0 : 2019 "Explosive atmospheres – Part 0: Equipment – General requirements"**

- **SANS 60079-11: 2012 "Explosive atmospheres – Part 1: Equipment protection by intrinsic safety 'i'**

Locations	Zone 1 or Zone 21	Surface industry
Hazardous Frequency		Intermittent as could occur under normal operations
Environment	Group IIC / IIIC	Propane to Hydrogen / Conductive Dust
Limiting Temperature	T4 / T135	
Ambient Temperature	-20 °C to +55 °C	

The use of the apparatus in hazardous locations is subject to the following provision, which shall be adhered to:

i) SANS 10086-1: 2014 requirements;
ii) Any relevant requirements of the OHS Act;
iii) Codes of Practice enforced in terms of Regulations 10.1 of the Minerals Act, by the Chief Inspector of Mines;
iv) Any restrictions and conditions enforced by the Chief Inspector of Factories (Group II equipment); and
v) Any conditions mentioned in the above report.

Conditions of certification:

1. This certificate covers all units sold / used / purchased from the date of this certificate to August 2026.
2. Specific conditions for the manufacture of the unit(s) are addressed in the confidential report of assessment to the manufacturer (SABS report no: EPT-230831-00034).

Evaluated by: **TM Matsobe**
TEST OFFICER

Reviewed by: **JR Segal**
SENIOR TEST OFFICER

Approved and Authorised by: **TE Pheelwane**
TECHNICAL LEAD
SABS EXPLOSION PREVENTION TECHNOLOGY