Smartphone
Smart-Ex® 03
SMART-EX03-DZ2*

- Global certificates - a common hardware platform
- Android™ 13 operating system
- Wireless connections such as 5G NR, WWAN, Wi-Fi and Bluetooth®
- Android™ Enterprise Recommended verified device
- Dual eSIM + nano-SIM card is interchangeable
- GPS
- NFC technology for wireless applications
- Service contract
- Programmable hardware buttons
- Special buttons for lone worker protection (LWP) applications

Smart-Ex 03 DZ2 (DIV 2 and Zone 2/22), ATEX/IECEx, Android™, with Camera (optional), 128 GB

Technical Data

Hardware		
Processor		Qualcomm® Snapdragon QCM6490 and SDR753 platform Full 3GPP Rel 15 support
RAM		8 GByte
Camera		**Optional:**
	Front camera	5 MP
	Main camera	13 MP with LED flash and phase detection autofocus optimized for ECOM scanning solutions
	Video recording resolution	1080p, 720p, 480p (main camera)
Internal data memory		128 GByte [1]
Sensors		Biometric, Accelerometer, Gyrometer, Magnetometer, Barometer, Proximity, Ambient light
Indicators/operating means		
Display		Can be operated while wearing gloves Extreme shock and scratch resistant Gorilla® glass
	Touchscreen technology	Capacitive multitouch
	Screen diagonal	15.24 cm / 6 inch
	Resolution	1080 x 2160 pixels
Key		Programmable push-to-talk, alarm and multifunction button Power button with fingerprint sensor Volume up/down
Electrical specifications		
Battery type		Li-Ion battery , 4400 mAh
Interface		
I/O ports		Charging via USB Type C + robust charging pads for charging in docking station (accessory) 3.5 mm audio interface, supporting legacy and standard 3.5mm audio accessories and updated PTT accessories through new, specific audio interface
Communication		
Mobile standard		
	2G	GSM: 800 / 850 / 900 / 1800 / 1900 MHz
	3G	WCDMA: B1, B2, B4, B5, B8 (850 / 900 / 1700 / 1900 / 2100 MHz)
	4G	LTE: B1, B2, B3, B4, B5, B7, B8, B12, B13, B14, B17, B18, B19, B20, B25, B26, B28, B29, B30, B34, B38, B39, B40, B41, B42, B43, B46, B48, B53, B66, B71

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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Technical Data

5G	NR: n1, n2, n3, n5, n7, n8, n12, n13, n14, n18, n20, n25, n28, n30, n38, n40, n41, n48, n66, n71, n77, n78, n79
WLAN	6E ready, 802.11a/b/g/n/ac/ax/e/k/r/v, support for Enterprise deployments
Bluetooth	5.2 with Low Energy support
GPS sensor	GPS, GLONASS, Galileo, QZSS, BeiDou
NFC	yes
SIM card	Dual SIM (eSIM + nano-SIM)
Software	
Operating system	Android™ 13 Android™ Enterprise Recommended verified device
Applications	PTT, eSentinel, eMDM, eBarcode, eDiagnostics, eConfig
SMS/MMS	yes
Ambient conditions	
Ambient temperature	-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications	
Degree of protection	IP68 , MIL-STD-810H
Mass	400 g
Dimensions	
W x H x D	84 mm x 172 mm x 18 mm / 25 mm
Data for application in connection with hazardous areas	
ATEX approval	
ATEX certificate	EPS 23 ATEX 1 098 X
ATEX marking	Ⓔ II 3G Ex ic IIC T4 Gc Ⓔ II 3D Ex ic IIIC T135 °C Dc Ta = -20 °C to +60 °C
International approvals	
IECEx approval	
IECEx certificate	IECEx EPS 23.0021X
IECEx marking	Ex ic IIC T4 Gc Ex ic IIIC T135 °C Dc Ta = -20 °C to +60 °C
General information	
Note	Android is a trademark of Google LLC. [1] no SD Card memory extension
Scope of delivery	Smart-Ex® 03 Li-Ion battery Charger USB cable Screwdriver Documentation

Accessories

Accessories for this product can be found on the internet at www.pepperl-fuchs.com.

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Smart Digitalization.

The power of Pepperl+Fuchs—certified and supported anywhere in the world.

Smart-Ex® 03:
High Performance 5G Smartphone
for Hazardous Areas

Your automation, our passion.

PEPPERL+FUCHS

Use Synergies. Bundling Know-How for Mobility Beyond Company Boundaries.

Enterprise Mobility Solutions from Pepperl+Fuchs are geared towards the requests and needs of our customers and pave the way for future-oriented digitalization. They offer a competitive solution concept and portfolio from a single source to enable the next level of enterprise-centric digitalization. This opens up completely new possibilities and increases the safety, efficiency, and transparency of operations in both conventional and IIoT applications—driving the value of connected solutions for mobile employees and digital transformation and thereby Pepperl+Fuchs Enterprise Mobility.

Digitalizing Hazardous Areas. Enabling Connectivity. Enhancing Enterprise Mobility.

The new Smart-Ex® 03 smartphone paves the way for future-oriented digitalization.

The 6-inch device combines all the expertise and know-how of **Pepperl+Fuchs** subsidiaries **ECOM Instruments** as a pioneer in intrinsically safe mobile devices and **Aava Mobile** as an expert in industrial tablets and wireless technologies. In addition, the smartphone scores with a global, competent, and customer-oriented Pepperl+Fuchs sales and support network in more than 80 countries.

The Pepperl+Fuchs brand ecom is a leading manufacturer of comprehensive intrinsically safe solutions for mobile computing and industrial communication in potentially hazardous areas. Since 1986, ecom has played a key role in pioneering explosion protection for mobile devices. The company has demonstrated its technological expertise with a number of innovations and tried-and-tested mobile solutions—from hazardous area-rated smartphones, cell phones, and tablets to accessories such as wireless headsets and barcode scanners with more the 500,000 devices in use worldwide. The new ecom Digital Products and Services platform and enterprise mobility management system completes the portfolio.

Aava Mobile Oy from Pepperl+Fuchs is a leading innovator in the global enterprise tablet and handheld market. The Aava engineering team develops pioneering industrial tablets as well as handhelds for and together with a great number of vendors. With hundreds of thousands of devices in use worldwide, Aava Mobile Oy is a leader for industrial use mobile device market, providing ruggedized tablets for tasks beyond consumer tablet use. Aava Mobile Oy has been part of the Pepperl+Fuchs Group since 2021.

Customers around the world know the Pepperl+Fuchs Group as a pioneer and innovator in electrical explosion protection and sensor technology. Building on decades of experience and technical leadership, the company develops components and solutions tailored to the needs of its customers.

5G Smartphone Smart-Ex 03

Enabling the Digital Transformation

High Performance

- Qualcomm 6490 Processor
- 8 GB RAM, 128 GB storage
- 5G, 4G, 3G and 2G
- WWAN
- W-Fi 6
- Bluetooth 5.2
- GPS, GLONASS, Galileo, QZSS, BeiDou
- NFC

Power

Powerful replaceable battery
for a full working day (4400 mAh)

Zone 1/21

Zone 2/22

Class I Div. 1

Class II Div. 2

made with
Qualcomm
Technologies

Today, skilled industrial workers play pivotal roles in critical sectors such as energy, manufacturing, and chemicals. The fusion of digital technology and IoT heralds a new era for them, enabling a connected workforce. Our mobile worker concept leverages mobile devices, asset tracking, analytics, and wearables to enhance their efficiency and safety. The launch of the new hazardous area-rated 5G smartphone Smart-Ex 03 takes mobile workers to a new level.

Camera

- 13 MP camera fit for use cases
- 5 MP front camera

Dedicated Keys

- User programmable buttons for special functions, e. g. Push-to-talk, camera, alarms
- Ergonomics, user-friendliness, and key position

Operating System

- Latest Android Operating System
- Android™ Enterprise Recommended

Connectivity

- USB 3.1 Type-C
- Quickly and easily connected to a keyboard and monitor in the office, transforming the smartphone into an user-friendly desktop computer or substitute

Features

- 6-inch display: robust Gorilla Glass 3, high contrast and good sunlight readability
- Slim protective frame
- Smart battery concept
- Improved audio connection with additional pins
- Dual SIM (eSIM/Nano SIM)
- Part of holistic accessory concept
- Future proof for AR applications or digital processes
- Three-year service contract available

Our many years of experience guarantee safety, performance, and reliability, delivering a sophisticated, smart solution for any digital application scenario from the experts in explosion protection, mobile computing, and telecommunications technology.

With the global service and support structure and remote support provided by Pepperl+Fuchs, sales specialists and system application engineers are available in more than 80 countries worldwide to solve any challenge.

For more information, visit
pepperl-fuchs.com/pf-smart-ex-03

Smart, Safe, Powerful

Equipped with 5G and Wi-Fi® 6, the Smart-Ex 03 sets new standards for flexible deployment in public and private networks of mobile network providers or the companies themselves. This provides users at company locations around the globe with state-of-the-art communication and collaboration capabilities through fast and secure transmission of large volumes of data: from remote support to video conferencing, digital radio communication with minimal latency via push-to-talk over cellular (PTToC) and combination with an extensive range of peripheral devices.

Innovative monitoring of the smartphone's device status and an intelligent battery concept ensure smooth operation and fast problem solving. Convenient operation, Android 13 and Android Enterprise Recommended put user benefits at the forefront. The Smart-Ex 03: 100 % Pepperl+Fuchs and 100 % investment protection for a compelling user experience. Make your processes smart!

Full transparency and safety:
Complete European in-house product development

Reliable partnership:
Secure supply chain and fast delivery directly from stock through bundled competencies within the Pepperl+Fuchs Group

Global service and support:
International sales specialists and application engineers in over 80 countries, combined with innovative solutions and service concepts, and a three-year service contract

Network flexibility and operator compatibility:
Broad range of wireless carrier certifications and network approvals for global deployment

Convenient operation in the field:
User-friendly product and interface design for an exceptional user experience

Investment and IT security:
Android Enterprise Recommended certification guarantees Android security patches and upgrade options

High performance:
5G functionality and Qualcomm processor provide security and reliability
- High data throughput, low latency
- Protection of sensitive corporate data through particularly secure and dedicated 5G campus networks

Assured uptime:
Intelligent battery concept with monitoring of operating status enables condition monitoring and predictive fault detection

Improved business processes:
Tailored to the wide range of software applications and application fields such as communication, digital workflows and work order management, operational safety, or augmented reality

Cellular Technology

5G technology represents a revolutionary leap forward in connectivity by enabling lightning-fast downloads, seamless streaming, and supporting emerging technologies such as augmented reality and the Internet of Things (IoT). It holds immense potential for industries and makes the hazardous area-rated Smart-Ex 03 ideally suited for use in maintenance and servicing work.

There are three different types of 5G network technologies:

Public networks

These are the familiar, traditional cellular networks. Many public networks have been supporting 4G LTE for a while and are now supporting 5G to further improve data throughput, low latency, and a better overall experience. The Smart-Ex 03 is ready to make use of this enhanced capability of 5G on a number of public networks.

Advantages

- Highest security and reliability for users

- High data throughput with low latency

- Precise localization of objects in the field

Private/campus networks

These networks are structurally similar to the public networks with some differences. One of these differences is the RF bands that it operates on and who can access these networks. Depending on how the network is structured, the Smart-Ex 03 can be used to access a company's own private and secure network on 4G and 5G bands including the CBRS 4G LTE band 48 and 5G n48. in addition to a much wider area of coverage than a Wi-Fi network can provide, a private cellular network can provide enhanced security protecting sensitive data.

Network slicing

While supported to some extent in 4G, 5G adds many advantages and abilities that 4G is not able to support. In a 5G environment, network slicing is a method of using a common physical infrastructure to support multiple virtual and independent networks. This allocation can be adjusted depending on the needs of the application, allowing for better control of the network and a better experience with a given amount of RF bandwidth. Each virtual network can have its own requirements, quality of service (QoS), security and latency requirements, all optimized for the function of the virtual network.

Better Informed and Fully Supported

The Smart-Ex® 03 offers companies advanced technology and outstanding connectivity, especially in industries such as oil and gas, chemicals, petrochemicals, pharmaceuticals, energy, and mining. In line with the Pepperl+Fuchs "Enterprise Mobility" concept, the smartphone ensures maximum efficiency in terms of digitization and cost savings.

Application: Seamless and Effective Troubleshooting

Industrial communication depends on reliable data transmission from the field to the control level. The mobile worker receives an error message via Ethernet-APL on the 5G Smart-Ex 03 smartphone. Using unique identifiers, they can check which component sent the error message and gain access to valuable data from the field device. A management system makes it possible to manage systems and order spare parts from any location.

Watch the video:
pepperl-fuchs.com/pf-troubleshooting

Application: Digital Work Order Management

The Smart-Ex 03 enables the digitalization of various business processes, such as work order management for planning and prioritizing work orders. In this process, mobile workers receive work orders on their smartphones, each containing a list of work steps that need to be completed to fulfill the order. This allows companies to guide their mobile workers through the entire work order process. In this way, digital work order management maximizes worker efficiency and simplifies the repair or maintenance of equipment in plants.

Watch the video:
pepperl-fuchs.com/pf-digitalworkorder

Application: Push-to-Talk Group Call

The Smart-Ex 03 enables encrypted and therefore secure, push-to-talk group calls with multiple people at different locations over 5G. This communication feature enables remote support for mobile workers and helps to carry out service and maintenance tasks in the field.

Watch the video:
pepperl-fuchs.com/pf-pttgroupcall

Innovative Solutions from a Single Source

Pepperl+Fuchs offers a range of coordinated peripherals, accessories, and software solutions as an ideal complement to the Smart-Ex 03.

SMART
HEADSET

SMART
PHONE

Applications 4.0

- Inspection/maintenance
- Asset management/tracking
- Collaborative working
- Scanning/auto ID
- Process automation/operations
- Lone worker protection/localization (GeoIP)
- Engineering/installation
- Augmented reality (AR)
- Security/safety
- Push-to-Talk over cellular (PTToC)

Software

- User management
- Customized roles and rghts
- Android Enterprise Recommended (AER)
- Android zero-touch
- Kiosk mode
- APKs
- API/3rd party

Hardware

Peripherals
- Scanner
- Camera
- Headset

Certification
- Ex certifications
- Regulatory
- Wireless certifications

Accessories
- Desktop charger/docking
- Spare battery
- Case
- Cradles

Safety

- Mobile worker
- Assets
- Data

Support

- Sales and application engineering
- Service level agreements
- Security patches
- Software updates

Digital Products
and Services

- Preconfiguration/staging
- Mobile device management (over-the-air)
- Device analytics

Digital Products and Services

Digital Products and Services is a solution that combines automated staging, mobile device management, and device analytics. It can also be used as a full-fledged enterprise mobility management system if required.

At the customer's request, ecom's mobile devices can ship from the factory with predefined custom configurations such as security settings, applications, and wireless setup. This allows devices to be used anywhere in the world immediately upon delivery.

The devices can be managed via the ecom online platform and updated remotely at any time during operation without having to be sent to local IT staff or the head office.

Cloud servers hosted in Germany meet the highest data protection standards and guarantee high data availability and security.

One-time staging and enrolling can also be done internally via ecom production servers. If required, device diagnostics and analytics can collect real-time operational data and fault analyses to continuously monitor device statuses and fix malfunctions preventively or immediately.

Additionally, the platform analyzes historical data to detect critical software events, installations, and other safety-critical processes. A statistical accumulation of events can be used to establish correlations and causalities between software errors, geographical data, and Wi-Fi coverage, for example.

Digital Products and Services is a ready-to-use service that ensures quality and security for all devices. This saves time and valuable resources.
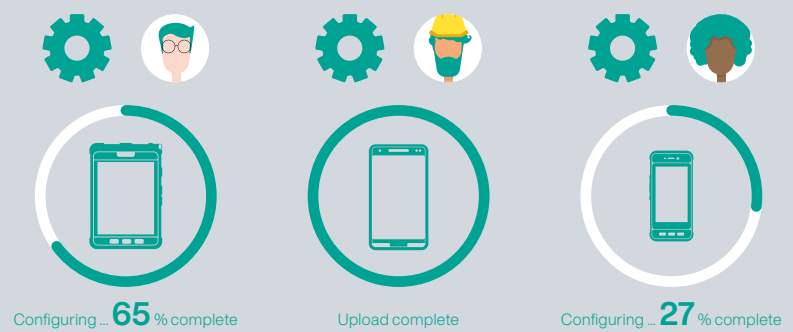
For more information, visit
pepperl-fuchs.com/pf-smart-ex-03

Staging and Enrolling
eCSL—Custom Service Load

- Custom device preconfiguration
- Delivered ready to use

Configuring ... **65** % complete   Upload complete   Configuring ... **27** % complete

Configuring and Management
eMDM—Mobile Device Management

- Update devices around the world simultaneously

Device Diagnostics

- Analytics help avoid problems and correct errors

Your automation, our passion.

Explosion Protection

- Intrinsic Safety Barriers
- Signal Conditioners
- FieldConnex® Fieldbus Infrastructure
- Remote I/O Systems
- Electrical Explosion Protection Equipment
- Purge and Pressurization Systems
- HMI Systems
- Mobile Computing and Communications
- HART Interface Solutions
- Surge Protection
- Wireless Solutions
- Level Measurement

Industrial Sensors

- Proximity Sensors
- Photoelectric Sensors
- Industrial Vision
- Ultrasonic Sensors
- Radar Sensors
- Rotary Encoders
- Positioning Systems
- Inclination and Acceleration Sensors
- Vibration Monitoring
- Industrial Ethernet
- AS-Interface
- IO-Link
- Identification Systems
- Displays and Signal Processing
- Connectivity

Pepperl+Fuchs Quality
Download our latest policy here:

www.pepperl-fuchs.com/quality

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