IDM-Z1-264-M-2D-J1-BT-N-N0, IDM-Z1-164-M-1D-J1-BT-P-N0

Bluetooth® handheld scanner for use in explosion-hazardous areas Zone 1/21

Manual

Your automation, our passion.

PEPPERL+FUCHS

With regard to the supply of products, the current issue of the following document is applicable: The General Terms of Delivery for Products and Services of the Electrical Industry, published by the Central Association of the Electrical Industry (Zentralverband Elektrotechnik und Elektroindustrie (ZVEI) e.V.) in its most recent version as well as the supplementary clause: "Expanded reservation of proprietorship"

Worldwide

Pepperl+Fuchs Group

Lilienthalstr. 200

68307 Mannheim

Germany

Phone: +49 621 776 - 0

E-mail: info@de.pepperl-fuchs.com

North American Headquarters

Pepperl+Fuchs Inc.

1600 Enterprise Parkway

Twinsburg, Ohio 44087

USA

Phone: +1 330 425-3555

E-mail: sales@us.pepperl-fuchs.com

Asia Headquarters

Pepperl+Fuchs Pte. Ltd.

P+F Building

18 Ayer Rajah Crescent

Singapore 139942

Phone: +65 6779-9091

E-mail: sales@sg.pepperl-fuchs.com

https://www.pepperl-fuchs.com

1 History of the Manual 4
2 Introduction 5
2.1 Content of this Document 5
2.2 Manufacturer 5
2.3 Target Group, Personnel 5
2.4 Symbols Used 6
3 Technical Specifications 7
3.1 Intended Use 7
3.2 Explosion Protection 7
3.3 Technical Data 8
3.4 Dimensions Base Station for Wall Mounting 10
3.5 Charging behavior 11
4 Application Scenarios 13
5 Commissioning 18
5.1 Preparing Bluetooth® Handheld Scanners 18
5.2 Battery Installation 26
5.3 Pairing a scanner to a base station 30
5.4 Pinout of Supply Module with RS-232 or USB 32
5.5 Base connection line RS-232 33
5.6 Base connection line USB 34
6 Troubleshooting 36
7 Accessories 37

1 History of the Manual

Version	Comments
12/2022	First edition for scanner generation x64
05/2024	Added chapter "battery installation" Updated sketches Minor Corrections

2 Introduction

2.1 Content of this Document

This document contains information that you need in order to use your product throughout the applicable stages of the product life cycle. These can include the following:

- Product identification
- Delivery, transport, and storage
- Mounting and installation
- Commissioning and operation
- Maintenance and repair
- Troubleshooting
- Dismounting
- Disposal

Note

This document does not substitute the instruction manual.

Note

For full information on the product, refer to the instruction manual and further documentation on the Internet at www.pepperl-fuchs.com.

Note

For specific device information such as the year of construction, scan the QR code on the device. As an alternative, enter the serial number in the serial number search at www.pepperl-fuchs.com.

The documentation consists of the following parts:

- Present document
- Instruction manual
- Datasheet

Additionally, the following parts may belong to the documentation, if applicable:

- EU-type examination certificate
- EU declaration of conformity
- Attestation of conformity
- Certificates
- Control drawings
- Functional safety manual
- Additional documents

2.2 Manufacturer

Pepperl+Fuchs Group Lilienthalstraße 200, 68307 Mannheim, Germany
Internet: www.pepperl-fuchs.com

2.3 Target Group, Personnel

Responsibility for planning, assembly, commissioning, operation, maintenance, and dismounting lies with the plant operator.

Only appropriately trained and qualified personnel may carry out mounting, installation, commissioning, operation, maintenance, and dismounting of the product. The personnel must have read and understood the instruction manual and the further documentation.

Prior to using the product make yourself familiar with it. Read the document carefully.

2.4 Symbols Used

This document contains symbols for the identification of warning messages and of informative messages.

Warning Messages

You will find warning messages, whenever dangers may arise from your actions. It is mandatory that you observe these warning messages for your personal safety and in order to avoid property damage.

Depending on the risk level, the warning messages are displayed in descending order as follows:

Danger!

This symbol indicates an imminent danger.

Non-observance will result in personal injury or death.

Warning!

This symbol indicates a possible fault or danger.

Non-observance may cause personal injury or serious property damage.

Caution!

This symbol indicates a possible fault.

Non-observance could interrupt the device and any connected systems and plants, or result in their complete failure.

Informative Symbols

Note

This symbol brings important information to your attention.

Action

1. This symbol indicates a paragraph with instructions. You are prompted to perform an action or a sequence of actions.

3 Technical Specifications

3.1 Intended Use

The handheld scanner is a handheld device.

It enables mobile capture and direct data transmission of 1-D and 2-D codes in explosion-hazardous areas. The device is specially modified for use in potentially explosion-hazardous areas of Zone 1 and Zone 21.

3.2 Explosion Protection

1D-Models:

Ex II 2G Ex ib IIB T4 Gb

Ex II 2D Ex ib IIIC T135°C Db

2D-Models:

Ex II 2G Ex ib op is IIB T4 Gb

Ex II 2D Ex ib op is IIIC T135°C Db

Test certificate

IBExU18ATEX1050
IECEx IBE 18.0009

Manufacturer

Pepperl+Fuchs Group
Lilienthalstraße 200
68307 Mannheim
Germany
info@de.pepperl-fuchs.com
www.pepperl-fuchs.com

3.3 Technical Data

	IDM-Z1-164-M-1D-J1-BT-P-N0	IDM-Z1-264-M-2D-J1-BT-N-N0
Description	Linear imager	2-D imager
Barcode	One-dimensional 1-D (Barcode and stacked code incl. PDF417)	One-dimensional 1-D & 2-D (Barcode and stacked code incl. PDF417)
Barcode types	Code 39, Code 39 Trioptic, Code 32, Code 93, Code 11, Codabar, Code 128, GS1-128 / EAN 128, UPC / EAN / JAN (with addition), MSI/Plessey, UK/Plessey, IATA, Interleaved 2 of 5, Standard and Industrial 2 of 5, Matrix 2 of 5, Telepen, GS1 DataBar, Australian Post, China Post, German Post, US Planet, US Postnet, British Post, Intelligent Mail, Japan Post, Korean Post, Dutch KIX Post	
Stacked codes	PDF417, MicroPDF417, Code 49, Code 16K, Composite, Codablock F	
2-D code types	-	Data Matrix, QR code, MicroQR-Code, Aztec, MaxiCode
Light source	LED, visible red light (630 nm)	
Scan frequency	500 Hz	60 Hz
Reading distance	20 mm ... 850 mm	30 mm ... 400 mm
Code resolution	Approx. ≥ 0.076 mm	Approx. ≥ 0.13 mm
Immunity to extraneous light	100 000 lx	

Electrical data		
	IDM-Z1-164-M-1D-J1-BT-P-N0	IDM-Z1-264-M-2D-J1-BT-N-N0
Current consumption	330 mA (Standby 80/130 mA; Peak 500 mA)	
Battery	Lithium ion battery 3.6 V; 1500 mAh	
Battery power	up to 40.000 scans w/ fully charged battery	up to 10.000 scans w/ fully charged battery

Feedback	
Visual	2 x LED (operating state/read confirmation)
Acoustic	Buzzer (can be switched off)

2024-05

Ambient conditions		
	IDM-Z1-164-M-1D-J1-BT-P-N0	IDM-Z1-264-M-2D-J1-BT-N-N0
Shock resistance	50 drop tests on concrete from a height of 2 m	
Operating temperature	-20°C to +50°C	
Storage temperature	-30°C to +70°C	-40°C to +70°C
Relative humidity	95% non-condensing	

Mechanical data	
Degree of protection	IP65
Dimensions [W x H x D]	104 mm x 176 mm x 76 mm
Weight	Approx. 260 g

3.4 Dimensions Base Station for Wall Mounting

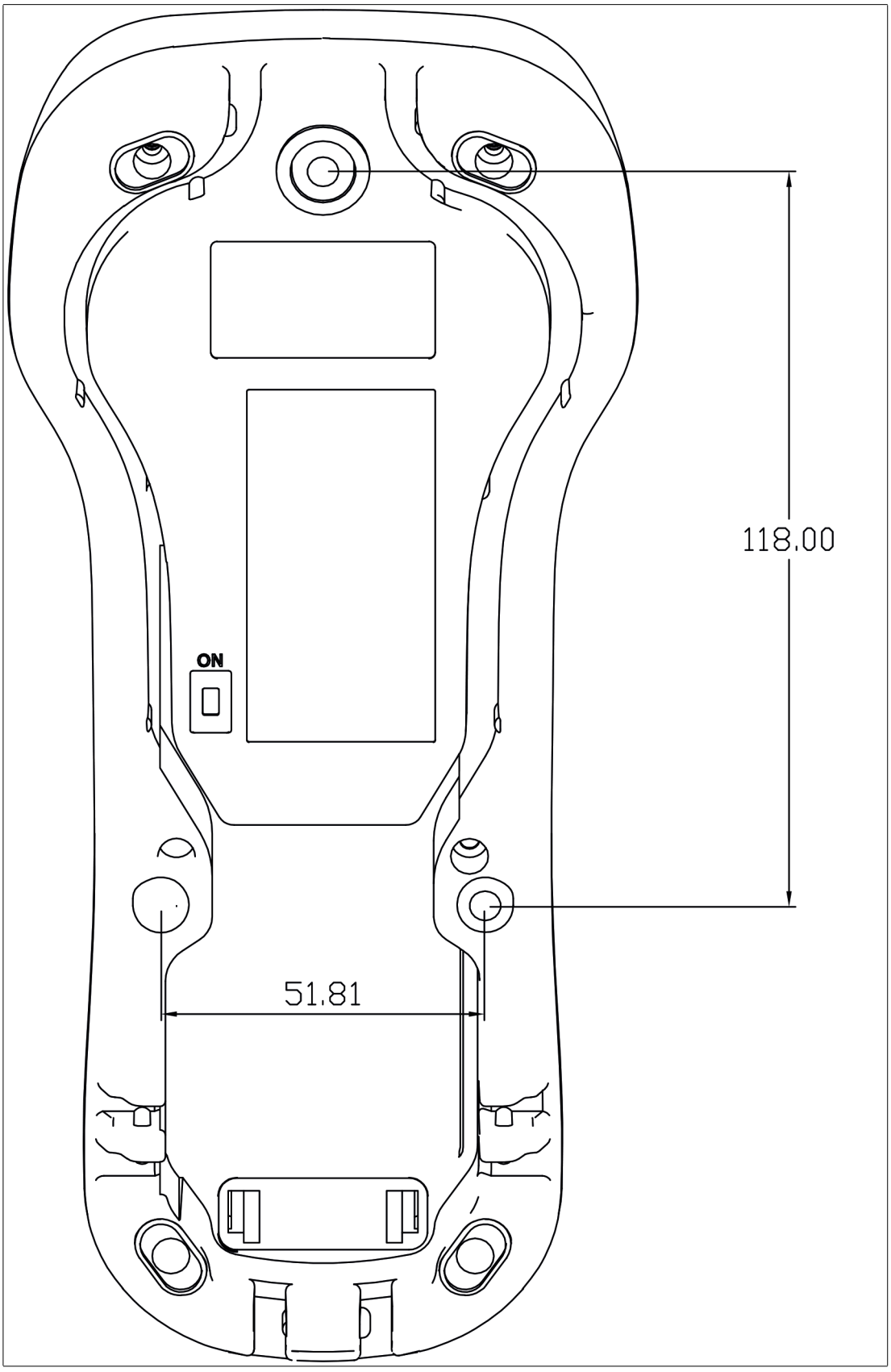

Figure 3.1 Hole pattern spacing of the IDM base station for wall mounting

2024-05

3.5 Charging behavior

The handheld Bluetooth scanners charge at different speeds in different scenarios. The scenarios can be found in the "Application Scenarios" chapter. The values apply to the 2D scanner handheld readers for zone 1/21. The 1D scanners for Zone 1/21 tend to load faster than the 2D scanners.

Zone 1/21 Scanner (IDM-Z1-x64-M-2D-*) and Ex Base Station for Zone 1/21 (IDM-Z1-x64-B-J1-BT-N0) via Supply Module (SK-IDM-Z1-x60-*)

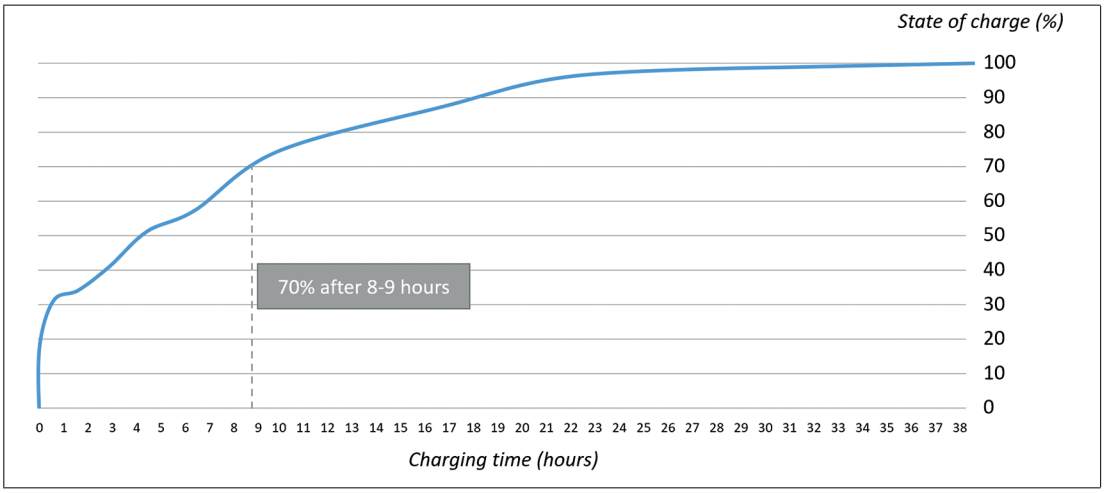

Figure 3.2 To reach a charging level of 100% in this setup, it requires 38 hours of charging time.

Zone 1/21 Scanner (IDM-Z1-x64-M-2D-*) and Non-Ex Base Station (IDM-Z1-x64-B-N0-BT-N0) via Power Supply (PSU-IDMx61-BC-N0-N0)

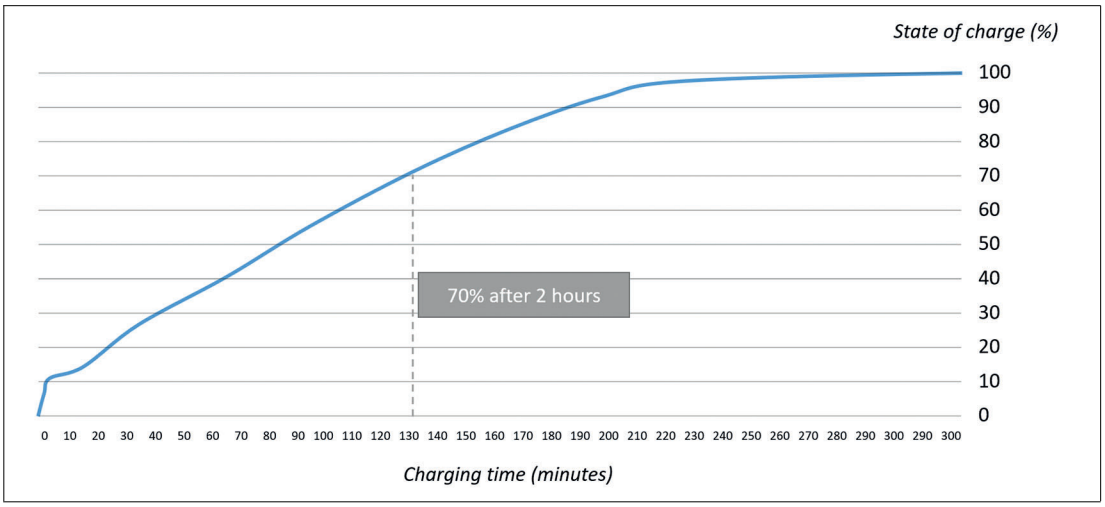

Figure 3.3 To reach a charging level of 100% in this setup, it requires 5 hours of charging time.

Zone 1/21 Scanner (IDM-Z1-x64-M-2D-*) and Ex Base Station for Zone 1/21 (IDM-Z1-x64-B-J1-BT-N0) via "S3" interface of VisuNet GXP

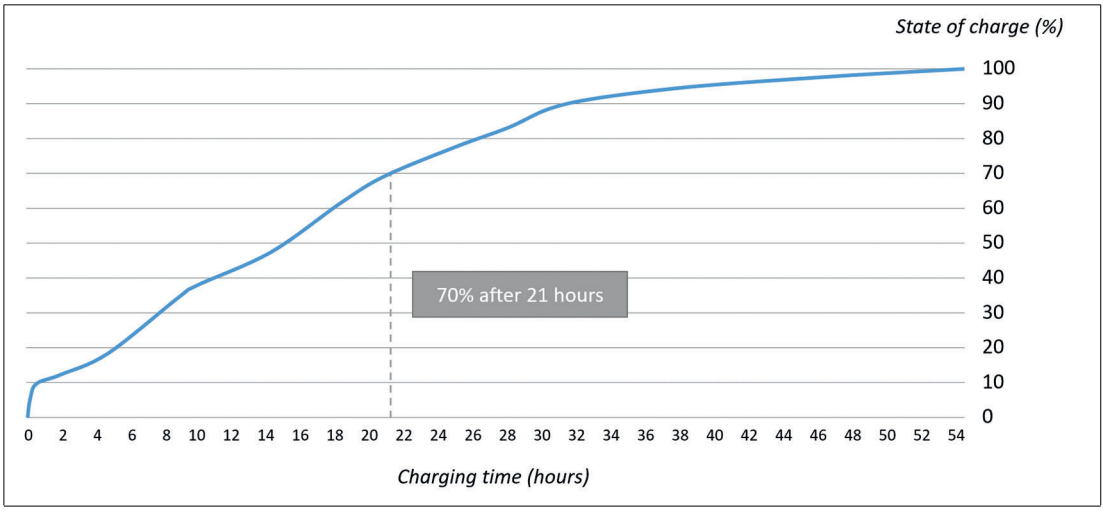

Figure 3.4 To reach a charging level of 100% in this setup, it requires 54 hours of charging time.

4 Application Scenarios

The Bluetooth handheld readers and their accessories can be used for various applications in Ex- and Non-Ex areas.

Charging the handheld reader can take place within the hazardous area using the base station certified for zone 1/21 and the associated power module. Furthermore, the scanner can be charged in the non-explosion-hazardous area using a base station/charging cradle.

Typical use cases are described below.

1. Base Station connected to VisuNet GXP in Hazardous Area via GXP's "S3" interface

Bluetooth handheld readers IDM-Z1-264-M-2D-J1-BT-N-N0, IDM-Z1-164-M-1D-J1-BT-P-N0, and base station connected to intrinsically safe RS-232 Ex i interface VisuNet GXP (interface option 3).

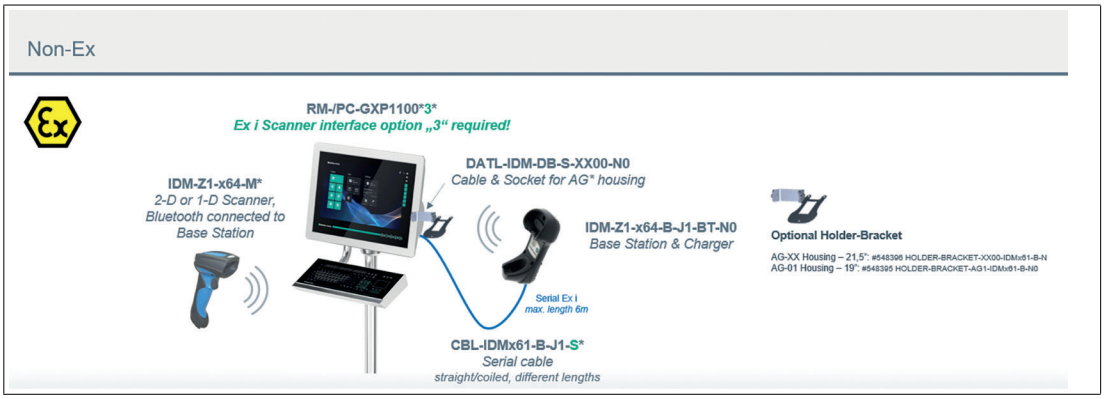

Figure 4.1

The Bluetooth handheld readers contain a battery designed for hazardous areas. For a proper operation in hazardous areas following items are required:

- Scanner IDM-Z1-x64-M*
- Base Station IDM-Z1-x64-B-J1-BT-N0 (Part-Nr.: 70158516)
- Cordset CBL-IDM-Z1-x61-B-J1*
- Connection Cable DATL-IDM-DB-S-XX00-N0
- RS-232 Ex i interface option of the VisuNet GXP

2. Base Station connected to VisuNet GXP in Hazardous Area via GXP's "S1" interface (RS-232 option)

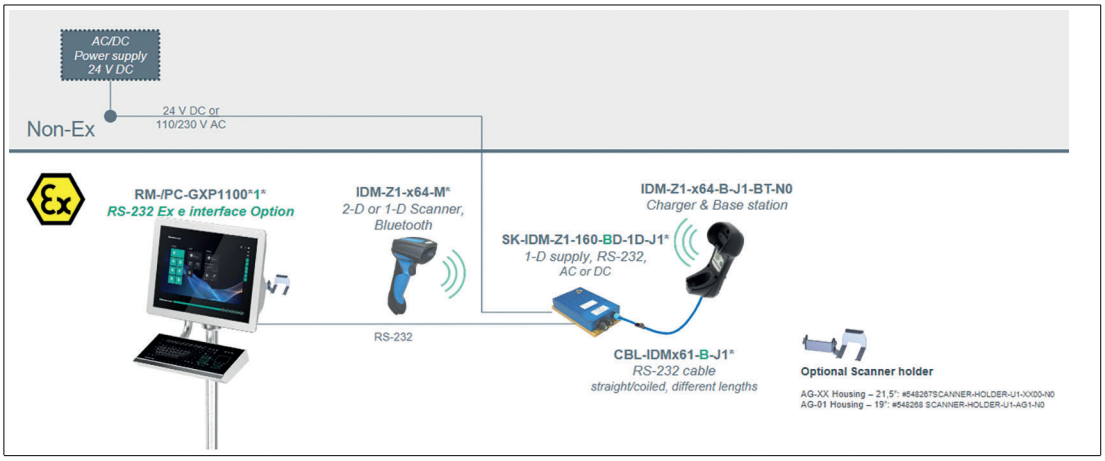

Figure 4.2

Both, the base station and the scanner can be operated within hazardous areas by using the power supply.

The following items are required for this setup:

- Scanner IDM-Z1-x64-M*
- Base Station IDM-Z1-x64-B-J1-BT-N0 (Part-Nr.: 70158516)
- RS-232 cable CBL-IDMx61-B-J1*
- Supply, RS-232 SK-IDM-Z1-160-BD-1D-J1*
- AC/DC Power supply 24 V DC
- RS-232 Ex e interface option for the VisuNet GXP
- Optional: Scanner holder

3. Scanner connected to GXP's "S2" interface (Bluetooth option in DPU) and Base Station in Safe Area

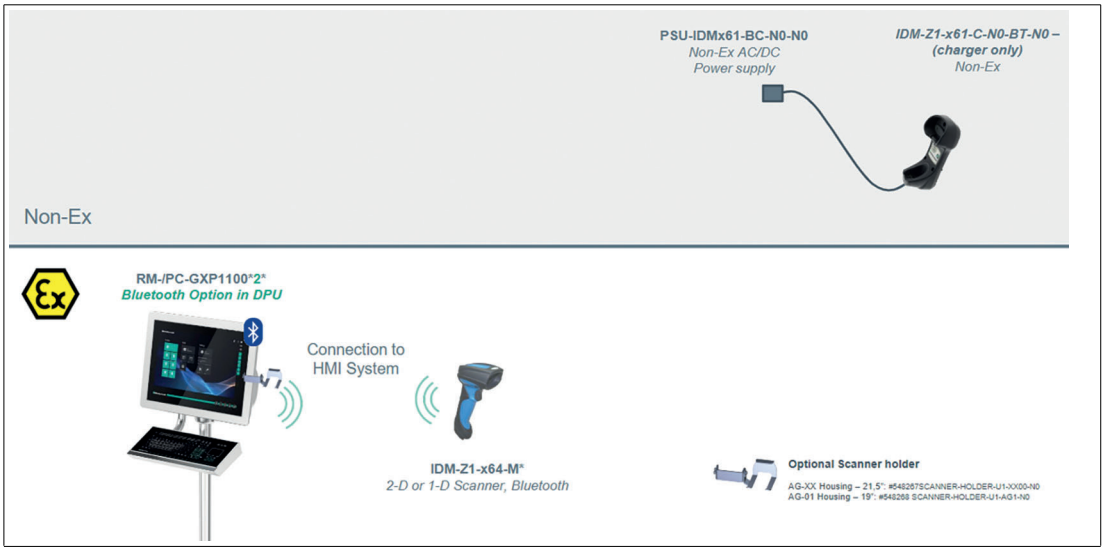

Figure 4.3

Communication between the Bluetooth handheld reader and the VisuNet GXP can be implemented via the built-in Bluetooth receiver of the VisuNet GXP display unit ("S2" interface).

The following items are required for this setup:

- IDM-Z1-x64-M*
- Non-Ex AC/DC Power supply PSU-IDMx61-BC-N0-N0

- Charging Station IDM-Z1-x61-C-N0-BT-N0
- Optional: Scanner holder

4. Stand-alone option: Base Station and Scanner in Hazardous Area

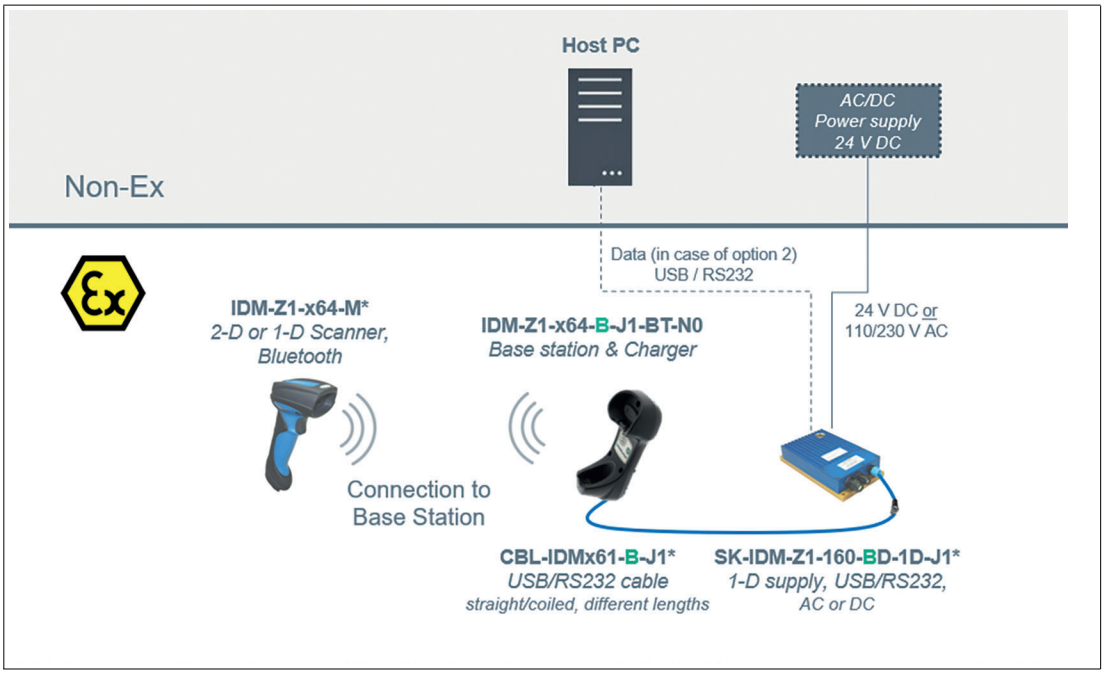

Figure 4.4

The following items are required for this setup:

- Scanner IDM-Z1-x64-M*
- Base Station IDM-Z1-x64-B-J1-BT-N0
- Power Supply SK-IDM-Z1-160-BD-1D-J1*
- USB/RS232 cable CBL-IDMx61-B-J1*
- AC/DC Power Supply 24 V DC

Note

The supply module is available for RS-232 and USB. Make sure to use the compatible RS-232 or USB cables.

5. Stand-alone option: Base Station in Safe Area

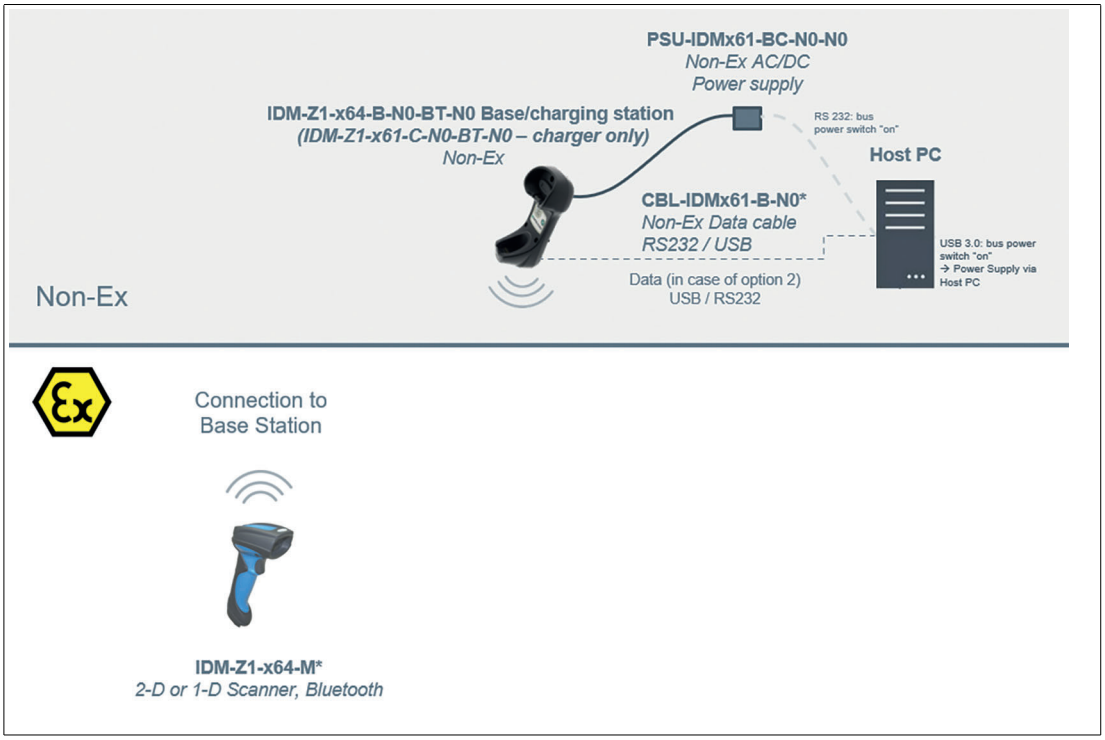

Figure 4.5

The following items are required for this setup:

- Scanner IDM-Z1-x64-M*
- Base Station IDM-Z1-x64-B-N0-BT-N0
- Or: Charging Station IDM-Z1-x61-C-N0-BT-N0
- Non-Ex AC/DC Power supply PSU-IDMx61-BC-N0-N0
- Non-Ex Data cable (RS232/USB) CBL-IDMx61-B-N0*

In this scenario a Host PC needs to be connected to the Non-Ex Base Station or Charger to enable data transfer. RS-232 and USB cables are available in different lengths. The SUB-D9 connector of the RS-232 needs additionally to be connected to the PSU-IDMx61-BC-N0-N0 Non-Ex AC/DC Power Supply.

Figure 4.6 PSU-IDMx61-BC-N0-N0 Non-Ex Power Supply needs to be connected to the SUB-D9 connector

2024-05

If USB 3.0 is available in your host device, both battery charging and regular operation can be supported by the USB Bus Power without using external power supply. If you want to use this feature, set the USB bus power switch to "ON". Then connect the cradle and host device via a USB cable.

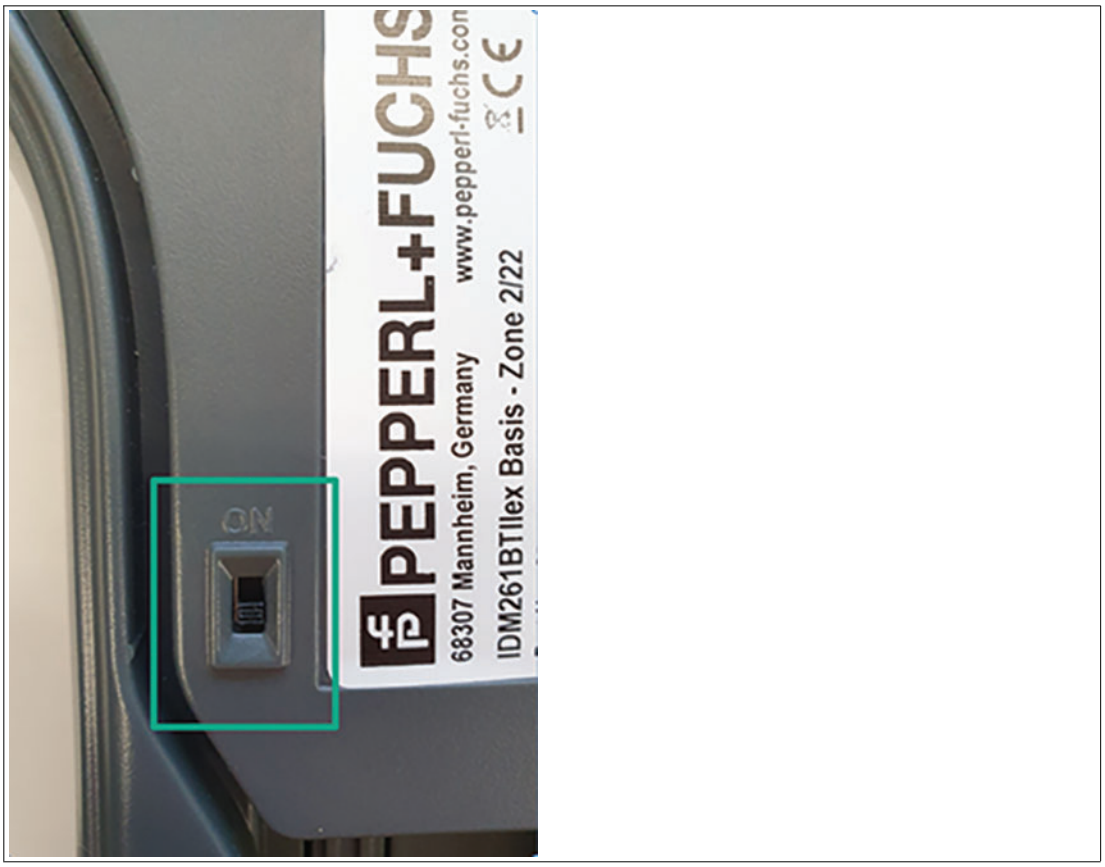

Figure 4.7 When USB 3.0 is available set the USB bus power switch to “ON”. Then connect the cradle and host device via a USB cable.

If only USB 2.0 is available in your host device, the external power supply is necessary as a power source, because the power supplied from USB 2.0 is not enough to support both battery charging and regular operation simultaneously.

5 Commissioning

5.1 Preparing Bluetooth® Handheld Scanners

Note

Charge the new battery pack for 12 hours prior to the first use.

Warning!

Self discharge of the batteries

When the batteries are inserted in the barcode reader, they tend to discharge more quickly. This effect can also occur when the barcode reader is not in use and is in stand-by mode. If the batteries are not inserted in the device, they discharge more slowly. If the batteries are inserted in the scanner, i.e. in stand-by mode, it is recommended to charge them regularly.

Danger!

The battery must not be changed or inserted in explosion-hazardous areas. Improper handling can void the type approval.

Preparation of Bluetooth® handheld scanners

1. The battery compartment is located on the underside of the Bluetooth® handheld scanner. Loosen the screw with a suitable tool to remove the cover. After loosening the screw, some force is required to remove the cover.

Figure 5.1 Removing the battery compartment lid

2. The battery is required to commission the Bluetooth® handheld scanner. The protective cap must be removed before inserting the battery into the handheld scanner.

Figure 5.2 Removing the protective battery cap

Danger!
Only the intended battery may be used!

3. The battery is inserted into the compartment on the handheld scanner. The end of the pull tab must be seen protruding out of the opening of the handheld scanner. If the battery is inserted correctly and connected to the contacts, there is an audible and visual signal. The opening must be completely sealed again. Before commissioning, check whether the screw cap has been properly sealed.

Figure 5.3 Inserting the battery and closing the protective cap

Using the base station in explosion-hazardous areas

1. Use the connection cable CBL-IDMx* to connect the base station to the supply module SK-IDM-Z1*. First, install the RJ50 male connector of the connection cable into the RJ50 port of the base station. The port is located on the bottom side of the base station. The connection cable is properly installed when you can hear an acoustical click. Ensure that the connection cable is firmly connected. Then proceed and connect the M12 connector of the connection cable with the female M12 connector of the supply module base connection cable. This cable is pre-installed and shipped with the supply module.

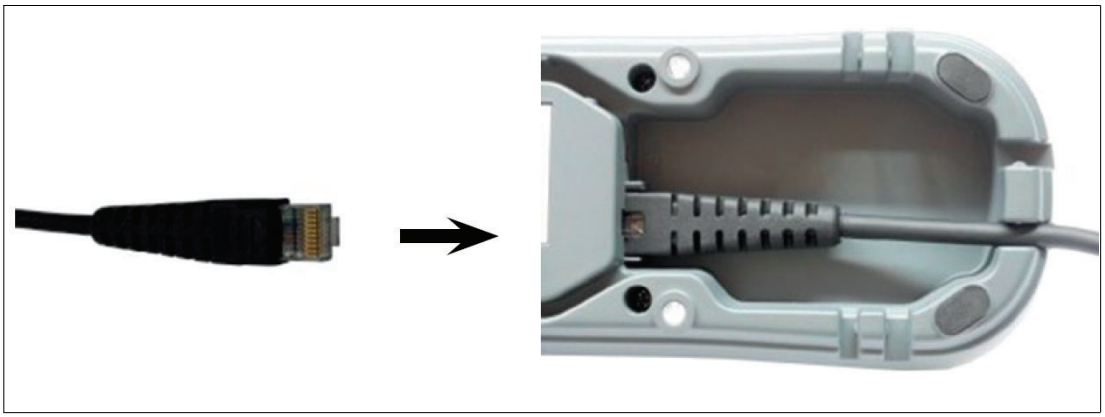

Figure 5.4 Connecting RJ50 connector of connection cable CBL-IDM* to base station

Figure 5.5 Male M12 connector of connection cable CBL-IDM*

Figure 5.6 Female M12 connector of pre-installed base connection cable of the supply module SK-IDM-Z1*

Figure 5.7 Connecting the plug coupling to the supply module basic connection line

2. The handheld scanner is placed in the charger. The underside of the handle is used first to ensure that the charging contacts are properly connected. The LED light on the scanner head indicates successful charging.

Figure 5.8 Inserting the scanner into the base station

Using the base station in non-explosion-hazardous areas

1. With a non-explosion-protected base station, charging in non-explosion-hazardous areas can be performed using the PSU-IDMx61-BC-N0-N0 power supply. The cable is plugged into the opening for this at the bottom of the base station. For a base station for explosion-hazardous areas, this connection is sealed at the factory.

Figure 5.9 Connecting the power supply for the non-explosion-hazardous base station

2. To connect in the non-explosion-protected area, the cable to connect to the power supply and to the PC is inserted into the opening for this at the bottom of the base station. An audible click can be heard when the cable is fully inserted. It must be verified that the cable is firmly anchored.

Figure 5.10 Connecting the RJ50 cable to the base station

3. The handheld scanner is placed in the charger. The underside of the handle is used first to ensure that the charging contacts are properly connected. The LED light on the scanner head indicates successful charging.

Figure 5.11 Inserting the scanner into the base station

5.2 Battery Installation

1. Inserting and testing the battery

Note

Due to safety reasons, the scanner battery is shipped with a low charging level. Before first operation of the scanner, ensure that the battery is fully charged.

Note

It is recommended to charge the battery for minimum 12 h in the Zone 1/21 rated base station, or 4 h in the non-ex rated charger.

Note

The scanners must be stored in a powered base station or charger when not operated to avoid a discharging of the battery. If this is not possible, remove the battery if it is not used for a longer period of time to avoid discharging or even deep discharging of the battery.

After inserting the battery, test the laser by pressing the trigger. The battery should be charged for 30% when delivered. If there is no laser beam, test another battery and try again. If the new battery works, dispose the defective battery. If both batteries do not work, send in the scanner for repair.

Put the scanner correctly into the charging station. Please note the following steps when installing the battery:

1. A "click" can be heard when connecting the cable to the charging station. Pushing with more force may be necessary.
2. After putting the scanner into charging station, a sound can be heard and the LED starts to blink red and green.

2024-05

If the LED is not blinking, take the battery out of the scanner and put it back in again. Put the scanner back into the charging station and try again.

If the LED flashed red, charge for 12 hours when using a base station for explosion-hazardous areas.

When charging a "2-D" scanner, make sure to pair the scanner to the base station before charging (see "Pairing a scanner to a base station"). Otherwise, there might be deviations regarding the charging behavior.

3. Make sure that the cap is closed properly and tightened with a torque of max. 1.12 Nm.

   Before screwing on, the cap must be pressed in completely. The screw connection is only used to secure the cover, not to "tighten" it.

   Make sure that the cap is closed or pressed in without a slit.

   Tighten the screw with a maximum torque of 1.12 Nm.

   An overload can already occur at over 2 Nm, as it is a plastic insert.

Figure 5.12

2. Charging Indication

Note

Due to explosion protection measures, the scanner LEDs that indicate the battery charging levels do not give a proper indication of the battery charging level. The indicators of the original, non-ex Scanner from SICK AG do not apply for the ex-version of this scanner.

Note

If the scanner is correctly contacted in the base station / charging cradle, the battery charges with both green and red indicator LEDs.

The scanners indicate low battery charge level via acoustic signals.

Two levels of charging can be differentiated.

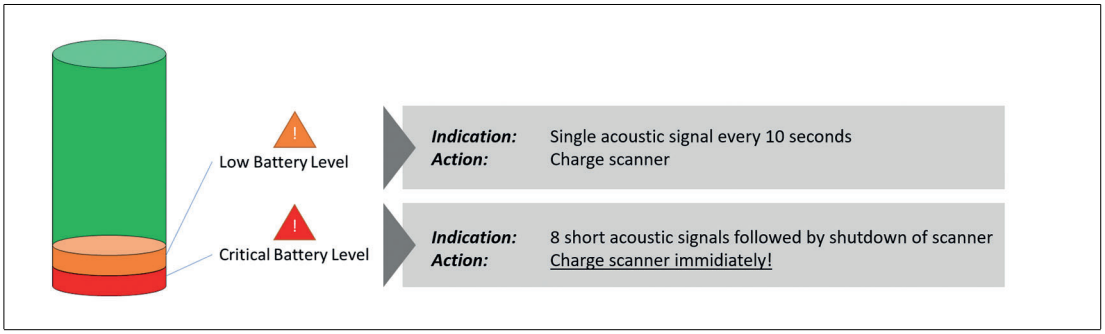

Figure 5.13

Low Battery Level

Following indicators indicate a low battery capacity

- Single acoustic signal, every 10 seconds
- 8-times short acoustic signal
- Random disconnects and reconnections of the Bluetooth® connection

If the Bluetooth® connection is lost and re-established due to low battery, charge the battery immediately!

If the scanner reports "Battery low" by beeping once and warns of low battery, stop operation and charge the battery!

Critical Battery Level

Warning!

If the scanner reports "Extremely low battery" by eight short beeps and is still used or is stored in an unpowered base while the Bluetooth® connection is established, the battery may shut down.

Warning!

If the battery is discharged until the deep discharge protection responds, the battery can no longer be reactivated by a base or charging station.

3. Charging behavior

Warning!
The Bluetooth® scanner must have an existing Bluetooth® connection to charge reliably.

Charging curve for Ex Bluetooth® scanner (zone 1/21) in combination with Ex base station for explosion-hazardous areas (zone 1/21) via supply module SK-IDM-Z1-160-BD-1D-J1*.

The following table indicates the maximum read cycles and charging time when the battery is fully empty ("low battery status"). The values are approximate. Actual number of scans may differ.

Scenario	Charging duration	IDM-Z1-164-M-1D-J1-BT-P-N0 (1D-Scanner)	IDM-Z1-264-M-2D-J1-BT-N-N0 (2D-Scanner)
Fully charged		**40 000 Scans***	**10 000 Scans***
IDM-Z1-x64-M-* w/ Supply Module (SK-IDM-Z1-x60-*) **Scenario #2, #4**	1 h	1 000 Scans	400 Scans
	12 h	25 000 Scans	6 000 Scans
Non-ex Charger (IDM-Z1-x61-C-N0-BT-N0) w/Power Supply (PSU-IDMx61-BC-N0-N0) **Scenario #3, #5**	1 h	6 000 Scans	2 500 Scans
	5 h	40 000 Scans	10 000 Scans
IDM-Z1-x64-M-* w/ VisuNet GXP S3 interface **Scenario #1**	1 h	700 Scans	300 Scans
	12 h	12 500 Scans	3 000 Scans

Table 5.1 *Tested under laboratory conditions

5.3 Pairing a scanner to a base station

a) 2nd and 3rd Generation (IDM*61 and IDM-Z*-x61)

In the "Quick Start Guide" on the Pepperl+Fuchs website, you can find barcodes to configure the IDM scanner. Scan the barcode "PAIR Mode" to put the scanner into paring mode. This barcode is for connecting one scanner to one base station.

Via the "PICO Mode" up to 7 scanners can be connected to a single base station.

After scanning the "PICO Mode" barcode from the Quick Start Guide, place the scanner into the charging station. The scanner makes short clicking sounds and a flashing blue LED appear. After a successful pairing, the LED on the scanner turns blue.

If you have problems with the pairing of the scanner to the base station, press the button on the base station for approx. 5 s until you hear a beep. After that, the scanner goes into "Uninstall" mode and is blinking red and green. Scan the "Pair Mode" barcode again and put the scanner into the charging station. The scanner's LED should flash blue and makes short clicking sounds. It should connect again.

It may occur that the scanner disconnects itself from the base station when it is put inactively in the base station for a longer period of time. When used again, the scanner will connect again by itself. A clicking sound can be heard. This takes about 20 s. During this time, it is scanning is disabled.

b) 4th Generation (IDM-Z*-x64*)

To pair an IDM scanner of the 4th generation to a base station (IDM-Z*-x64*), scan the "Quick Pair Code" inside the base station.

Figure 5.14

c) Mix of Generations

When using different generations of scanners and base stations, complications may arise with regard to the pairing behavior. Make sure that the devices that you use are compatible. The following matrix shows the compatibility of the different generations.

Bluetooth Scanner / Base Stations		2nd Gen (x61)		3rd Gen (x61)		4th Gen (x64)	
		1D BT Scanner IDM161-M-1D-J1-BT-N-N0 IDM161-M-1D-J1-BT-P-N0	2D BT Scanner IDM261-M-2D-J1-BT-N-N0 *(the only one offered at that time)*	1D BT Scanner IDM-Z1-161-M-1D-J1-BT-*-N0 IDM-Z2-161-M-1D-J2-BT-*-N0	2D BT Scanner IDM-Z1-261-M-2D-J1-BT-N-N0 IDM-Z2-261-M-2D-J2-BT-N-N0	1D BT Scanner IDM-Z1-164-M-1D-J1-BT-P-N0 IDM-Z2-164-M-1D-J2-BT-P-N0	2D BT Scanner IDM-Z1-264-M-2D-J1-BT-N-N0 IDM-Z2-264-M-2D-J2-BT-N-N0
2nd Gen	Base Station (IDMx61) IDMx61-B-J1-BT-N0 *(the only one offered at that time)*	✓	✓	✓	✓	✗	✗
3rd Gen	Base Stations (x61) IDM-Z1-x61-B-*-BT-N0 IDM-Z2-x61-B-*-BT-N0	✓	✓	✓	✓	✓	✓
4th Gen	Base Stations (x64) IDM-Z1-x64-B-*-BT-N0 IDM-Z2-x64-B-*-BT-N0	⚠	✗	⚠	✓	✓	✓

✓	New function via "Quick Pair Code" available	⚠	**Firmware version must be checked.** New pairing feature via the "Quick Pair Code" can only be used if the firmware version is **4.10.19 or higher.** Updates can be performed with an USB base station and the update tool from SICK. If a customer does not have an USB base station, the scanner can be sent in and updated by the P+F **CSC.**
✓	Pairing via Code from "Quick Start Guide"	✗	Incompatible – it is recommended to sell a new base station (3rd generation or newer) or to repair the old hardware. If the electronics need to be repaired, it should be noted that there is a generation change (see the chapter reparability).

The firmware version can be found out by scanning a code in the manual (Quick Start Guide). To do this, scan the code "System Information" in the "System commands" chapter. The information is then output as text. Therefore scan into a text editor to output the version number.

Figure 5.15

Reading out the firmware version in VisuNet RM Shell

1. Pair the scanner with the base station. For *64* scanners use the barcode on the base station for pairing. For *61* scanners use the "PAIR Mode" barcode from the Quick Start Guide.
2. Create a "Notepad" app in VisuNet RM Shell. How to create an app in VisuNet RM Shell 5 and 6 can be found in the corresponding VisuNet RM Shell manual on the Pepperl+Fuchs website.
3. Open the "Notepad" app
4. Scan the barcode "System Information" in the Quick Start Guide
5. All relevant system information is displayed in the Notepad app

5.4 Pinout of Supply Module with RS-232 or USB

Supplying the base station according to system structure 2 via connector - plug/coupling.

The terminal assignment is located under the unscrewable opening on the front of the supply module.

Danger!

Do not open the housing in the explosion-hazardous area

Before the device is put into operation in explosion-hazardous areas, it must be ensured that the housing is completely closed again and screwed on properly.

Changes to the pinout may only be carried out by trained and qualified personnel.

Connection of the base station to the supply module RS-232 or USB via connector - plug/coupling

The terminal assignment is located under the unscrewable opening on the front of the supply module.

(1) Ex e terminal compartment to connect the power supply and the data line

(2) Ex i terminal compartment to connect the consumers (base station/scanner)

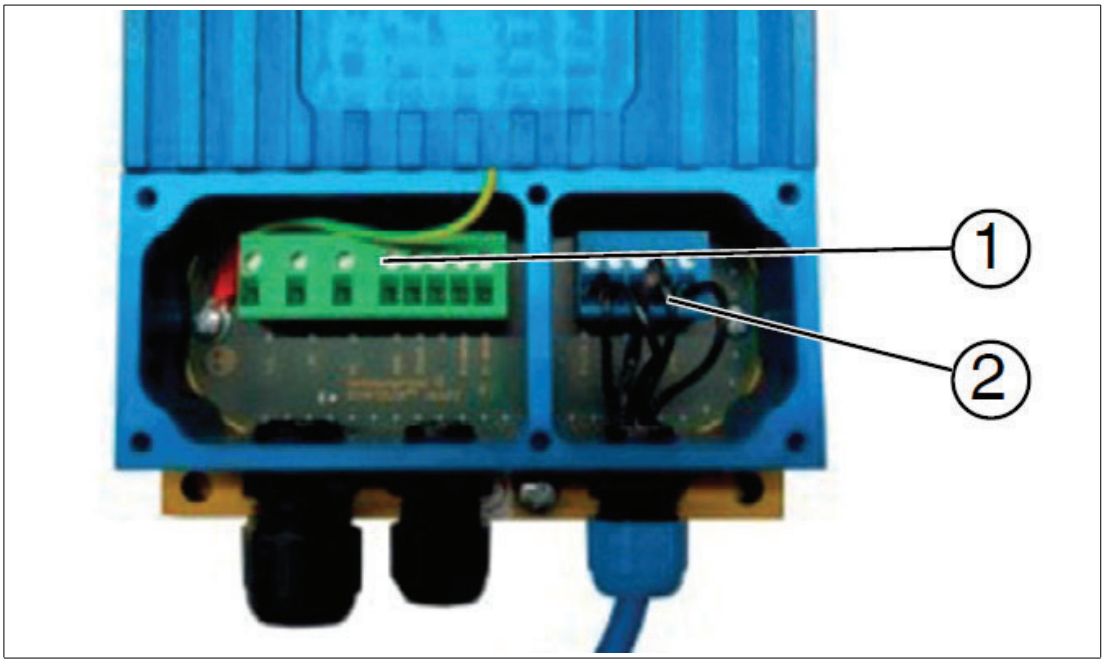

Figure 5.16 Supply module terminal compartment

External connection lines:

Data lines	USB: 0.2 – 2.5 mm^2, 4-core or RS-232: 0.2 – 2.5 mm^2 3-core
Supply line	0.2 – 2.5 mm^2 3-wire
(see accessories in the appendix)	

The Bluetooth® handheld scanner, the base station, and the supply module may be connected and used in explosion-hazardous areas. The current rating of the connection line must be observed.

2024-05

The blue base connection cable is delivered pre-assembled with the supply module SK-IDM-Z1-*. The cable consists of a M12 connector plug and a 3-core cable. The individual cores are numbered (printed on the core insulation) and must be connected as follows (4.2 RS-232 interface and 4.3 USB interface) to the intrinsically safe terminals of the supply module.

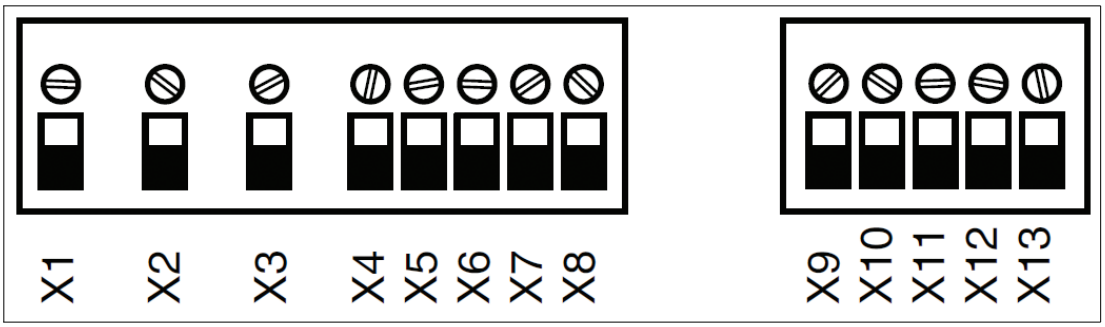

Figure 5.17 Terminal blocks in the terminal compartment

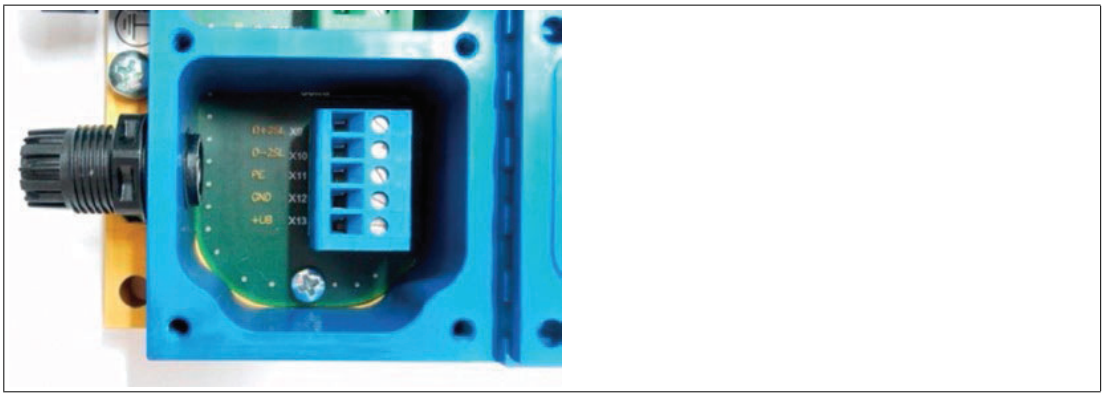

Figure 5.18 Intrinsically safe terminal compartment of the supply module after removing the connector connection cores

5.5 Base connection line RS-232

Assignment of pre-installed base connection cable to supply module (RS-232)

Assignment of pre-assembled connection coupling		Supply module terminal compartment	
Pin	Core designation	Designation	Number
3	3	RxD	X9
		GND	X10
		PE	X11
2	2	GND	X12
1	1	+UB	X13

Direct connection of the base station without a plug/coupling to the supply module with RS-232 interface

The base station can be connected directly to the supply module without using the blue base connection cable.

The assignment of the serial base station cable CBL-IDM-x61* is outlined in the following table.

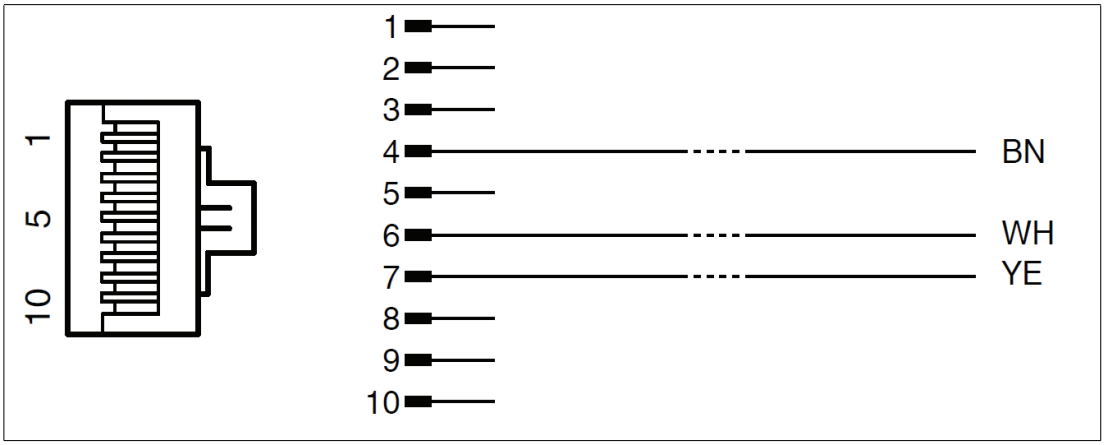

Figure 5.19 Connection layout

Assignment of connection cable CBL-IDM-x61* to supply module (RS-232)

Cordset assignment		Supply module terminal compartment	
RJ50 pinout	Strand color	Designation	Assignment
6	White	TxD	X9
			X10
			X11
4	Brown	GND	X12
7	Yellow	+UB	X13

Note

Information relating to programming from the SICK AG manual (www.SICK.com) is required for the complete commissioning of the handheld scanner.

5.6 Base connection line USB

Base connection cable USB

Pinout of connector plug	
Pin	Designation
3	D+
2	D-
4	GND
1	+UB

Connection of USB connection cable to supply module

Pre-assembled connection coupling		Terminal compartment	
Pin	Core	Designation	Number
3	3	D+	X9
2	4	D-	X10
		PE	X11
4	2	GND	X12
1	1	+UB	X13

2024-05

Direct connection of the base station without plug/coupling to the supply module with USB interface

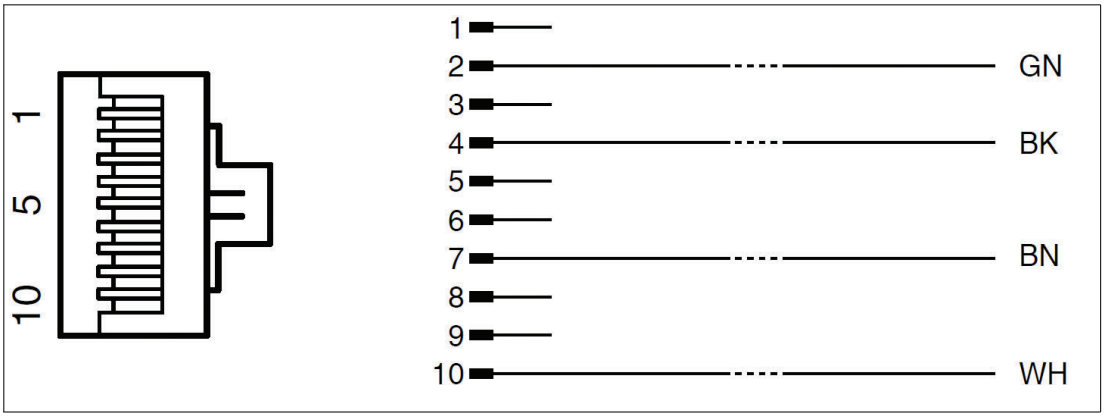

Figure 5.20 RJ50 plug - connection layout

Base station cordset

Cordset assignment		Supply module terminal compartment	
RJ45 pinout	**Strand color**	**Designation**	**Assignment**
2	Green	D+2SL	X9
10	White	D-2SL	X10
			X11
4	Black	GND	X12
7	Brown	+UB	X13

Note

Information relating to programming from the SICK AG manual (www.SICK.com) is required for the complete commissioning of the handheld scanner.

6 Troubleshooting

1. Scanner cannot be paired with base station

- Follow the steps in chapter "Pairing a scanner to a base station"
- Make sure that base station and the scanner are compatible (see chapter "Pairing a scanner to a base station")

2. Scanner does not charge

- Make sure the scanner is connected in a valid scenario (see chapter "Application Scenarios")
- Make sure the cap is closed properly and tightened with a torque of max. 1.12 Nm.Before screwing on, the cap must be pressed in completely. The screw connection is only used to secure the cover, not to "tighten" it. Make sure the cap is closed or pressed in without a slit. Tighten the screw with a maximum torque of 1.12 Nm. An overload can already occur at over 2 Nm, as it is a plastic insert.
- (see chapter "Inserting and testing the battery")
- Make sure the battery has been charged long enough (see chapter "Charging indication")
- Make sure that a laser beam is visible when pressing the trigger. If this is not the case, charge the scanner with a Non-Ex base station.
- Make sure the power LED on the base station is illuminated. If the LED on the base does not light up, disconnect and reconnect the connection cable. You should hear a "click" as you connect. If no LED still lights up, check whether you are using the correct cable (see chapter "Application Sketches") and whether the power supply is active.
- Make sure that the scanner has an existing and active Bluetooth connection while charging (see chapter "Charging behavior")
- Charge with Non-Ex-Base Station. There may be cases where deep discharge protection interferes with the charging of the scanners. This can be bypassed with a non-Ex base station and deactivated when the scanner is charged with it (see chapter "Battery installation")
- If possible, check firmware version. Instructions on how to read out the firmware version can be found in chapter "Pairing a scanner to a base station". If the firmware is older than 5.00.17, please contact Sales Support of Pepperl+Fuchs

7 Accessories

Corded Handheld Reader Mounting Accessories

Item number	Product name	Description	Photo
#548267	SCANNER-HOLDER-U1-XX00-N0	Scanner holder compatible with Housing AG-XX00 Material: Stainless steel AISI 316L (1.4404) Compatible with IDMx6x, ecom Ident-Ex® 01 and PSCAN Prepared for mounting to right side of housing	
#548268	SCANNER-HOLDER-U1-AG1-N0	Scanner holder compatible with Housing AG1 Material: Stainless steel AISI 316L (1.4404) Compatible with IDMx6x, ecom IdentEx01 and PSCAN Prepared for mounting to right side of housing	
#548353	SCANNER-HOLDER-IDMx6x-TRIPOD	Tripod Scanner holder Compatible to IDMx6x code scanner	
#548354	SCANNER-HOLDER-IDMx6x-DESKTOP	Desktop Scanner holder Compatible to IDMx6x code scanner	

Bluetooth® Handheld Reader Accessories for VisuNet HMI Applications

Item Number	Product Name	Description	Photo
#70174337	IDM-Z1-x64-B-J1-BT-N0	Bluetooth® reader base station & charger Ex-protection: ATEX & IECEx Zone 1/21 Radio Interface: Bluetooth® Protocol: USB/Serial (depends on connection cable) Compatible with IDM-Z1-x64-M-* Bluetooth® code readers NOTE: Connection cable not included. Please order separately!	
#70158517	IDM-Z1-x64-B-N0-BT-N0	Bluetooth® reader base station & charger Ex-protection: non-Ex, for use in non-explosion-hazardous area only! Radio Interface: Bluetooth® Protocol: USB/Serial (depends on connection cable) Compatible with IDM-Z1-x64-M-* Bluetooth® code readers NOTE: Connection cable not included. Please order separately!	
#70115392	IDM-Z1-x61-C-N0-BT-N0	Charger cradle for 1D & 2D Bluetooth® reader Ex-protection: non-Ex, for use in safe area only! Compatible with IDM-Z1-x64-M-* Bluetooth® code readers NOTE: Please order connection cable separately!	
#548396	HOLDER-BRACKET-XX00-IDMx61-B-N	Bracket to mount IDM-Z1-x64-B-J1-BT-N0 Base station to AG-XX00 housing. - Material: Stainless steel AISI 304 (1.4301) - Assembly: Right side of AG-XX00 housing - Includes bracket and installation materials - Note: Base station and cables not included!	
#548395	HOLDER-BRACKET-AG1-IDMx61-B-N0	Bracket to mount IDM-Z1-x64-B-J1-BT-N0 Base station to AG1 housing - Material: Stainless steel AISI 304 (1.4301) - Assembly: Right side of AG1 housing - Includes bracket and installation materials - Note: Base station and cables not included!	

Bluetooth® Handheld Reader Accessories for VisuNet HMI Applications

Item Number	Product Name	Description	Cable	Photo
#548345	CBL-IDMx61-B-N0-S-S18-N0	Serial connection cable for base station Ex-protection: non-Ex, for use in safe area only! Interface: RJ50 (cradle) to SUB-D9 connector Protocol: serial Compatible withIDM-Zx-x64-B-N0-*	Straight 1.8-m length	
#548346	CBL-IDMx61-B-N0-S-C38-N0	Serial connection cable for base station Ex-protection: non-Ex, for use in safe area only! Interface: RJ50 (cradle) to SUB-D9 connector Protocol: serial Compatible with IDM-Zx-x64-B-N0-*	Coiled 3.8-m length	
#548343	PSU-IDMx61-BC-N0-N0	AC/DC Power supply for Base station & charger Input: 230 V AC Ex-protection: non-Ex, for use in safe area only! Compatible with non-Ex base station & charger IDM-Zx-x64-B-N0-BT-N0 and IDM-Zx-x61-C-N0-BT-N0	Only required in combination with Serial connection cable for base station (SUB-D9 connector)	
#548347	CBL-IDMx61-B-N0-U-S18-N0	USB connection cable for base station Ex-protection: non-Ex, for use in safe area only! Interface: RJ50 (cradle) to USB Type A connector Protocol: USB Compatible with IDM-Zx-x64-B-N0-*	Straight 1.8-m length	
#548348	CBL-IDMx61-B-N0-U-C38-N0	USB connection cable for base station Ex-protection: non-Ex, for use in safe area only! Interface: RJ50 (cradle) to USB Type A connector Protocol: USB Compatible with IDM-Zx-x64-B-N0-*	Coiled 3.8-m length	

Item Number	Product Name	Description	Cable	Photo
#548349	CBL-IDMx61-B-J1-S-S18-N0	Serial connection cable for base station Ex-protection: suitable for Zone 1/21 & Zone 2/22 Interface: RJ50 (cradle) to M12 male connector Cable: straight; 1.8-m length Protocol: serial Compatible with IDM-Zx-x64-B-J1-* base station	Straight 1,8-m length	
#548350	CBL-IDMx61-B-J1-S-C38-N0	Serial connection cable for base station Ex-protection: suitable for Zone 1/21 & Zone 2/22 Interface: RJ50 (cradle) to M12 male connector Cable: coiled; 3.8-m length Protocol: serial Compatible with IDM-Zx-x64-B-J1-* base station	Coiled 3,8-m length	
#548351	CBL-IDMx61-B-J1-U-S18-N0	USB connection cable for base station Ex-protection: suitable for Zone 1/21 & Zone 2/22 Interface: RJ50 (cradle) to M12 male connector Cable: straight; 1.8-m length Protocol: USB Compatible withIDM-Zx-x64-B-J1-* base station	Straight 1,8-m length	
#548352	CBL-IDMx61-B-J1-U-C38-N0	USB connection cable for base station Ex-protection: suitable for Zone 1/21 & Zone 2/22 Interface: RJ50 (cradle) to M12 male connector Cable: coiled; 3.8-m length Protocol: USB Compatible with IDM-Zx-x64-B-J1-* base station	Coiled 3,8-m length	
#548376	DATL-IDM-DB-S-XX00-N0	Connector cable for wired 1D Scanner IDM-Z1-164-D-1D-J1-SU-P-N0 (S3-Interface required) and 2D Scanner IDM-Z1-264-D-2D-J1-S1-N-N0 (S4-interface required) compatible with Housing AG-XX00-* and AG1 - 4-wire with ferrules - IDM Scanner connection via M12-connector - Note: Supports only RS-232 Scanner/Basestation	1,0-m length	

Serial extension cables

Item Number	Product Name	Description	Cable	Photo
#548356	CBL-IDMx6x-DB-J1-S-C30-N0	Serial extension cable Ex-protection: suitable for Zone 1/21 & Zone 2/22 Interface: M12 female socket to M12 male connector Protocol: serial	Coiled 3-m length	
#548357	CBL-IDMx6x-DB-J1-S-C60-N0	Serial extension cable Ex-protection: suitable for Zone 1/21 & Zone 2/22 Interface: M12 female socket to M12 male connector Protocol: serial	Coiled 6-m length	
#548365	CBL-IDMx6x-DB-J1-S-S30-N0	Serial extension cable Ex-protection: suitable for Zone 1/21 & Zone 2/22 Interface: M12 female socket to M12 male connector Protocol: serial	Straight 3-m length	
#548355	CBL-IDMx6x-DB-J1-S-S60-N0	Serial extension cable Ex-protection: suitable for Zone 1/21 & Zone 2/22 Interface: M12 female socket to M12 male connector Protocol: serial	Straight 6-m length	

Cable accessories

Item Number	Product Name	Description	Cable
#548379	S-RN2/DB9-5-N0	RS-232 cable with SUB-D9 plug (female) and open cable ends with wire end ferrules	5-m length
#548380	S-RN2/DB9-20-N0	RS-232 cable with SUB-D9 plug (female) and open cable ends with wire end ferrules	20-m length
#193077	DATL-A3-1.5-1	Supply line for 90 – 240-VAC supply 3 x 1.5 mm², diameter 8.1 mm Assembly 6 x 1.5-mm² wire end ferrules	

Corded Handheld Reader Accessories for VisuNet HMI Applications

Ex-protection: ATEX&IECEx Zone 1/21			
Item number	**Product name**	**Description**	**Photo**
#70115393	SK-IDM-Z1-160-BD-1D-J1-DC-S-N	Barrier for corded 1D reader & base station Input: 24 V DC Protocol: RS-232/422/485 Ex e (to host device) Compatible with IDM-Z1-164-D-1D-J1-SU-P-N0 and IDM-Z1-x64-B-J1-BT-N0 with serial connection cables incl. short setup cable with M12 female socket	
#70115394	SK-IDM-Z1-160-BD-1D-J1-DC-U-N	Barrier for corded 1D reader & base station Input: 24 V DC Protocol: USB Ex e (to host device) Compatible with IDM-Z1-164-D-1D-J1-SU-P-N0 and IDM-Z1-x64-B-J1-BT-N0 with USB connection cables incl. short setup cable with M12 female socket	
#70115395	SK-IDM-Z1-160-BD-1D-J1-AC-S-N	Barrier for corded 1D reader & base station Input: 24 V DC Protocol: RS-232/422/485 Ex e (to host device) Compatible with IDM-Z1-164-D-1D-J1-SU-P-N0 and IDM-Z1-x64-B-J1-BT-N0 with serial connection cables incl. short setup cable with M12 female socket	
#70115396	SK-IDM-Z1-160-BD-1D-J1-AC-U-N	Barrier for corded 1D reader & base station Input: 230 V AC Protocol: USB Ex e (to host device) Compatible with IDM-Z1-164-D-1D-J1-SU-P-N0 and IDM-Z1-x64-B-J1-BT-N0 with USB connection cables incl. short setup cable with M12 female socket	

2024-05

Your automation, our passion.

Explosion Protection

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

Industrial Sensors

- Proximity Sensors
- Photoelectric Sensors
- Industrial Vision
- Ultrasonic Sensors
- Rotary Encoders
- Positioning Systems
- Inclination and Acceleration Sensors
- Fieldbus Modules
- AS-Interface
- Identification Systems
- Displays and Signal Processing
- Connectivity

Pepperl+Fuchs Quality
Download our latest policy here:

www.pepperl-fuchs.com/quality

PEPPERL+FUCHS

www.pepperl-fuchs.com

/ DOCT-8476A