SK-IDM-Z1-160-BD-1D-J1-*-N
SK-IDM-Z1-260-D-2D-J1-*-N

Supply Module

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"

PEPPERL+FUCHS

1 History of the Manual

Version	Comments
12/2022	Addition new scanner generation IDM-Z1-x64-* and IDM-Z2-x64-*

PEPPERL+FUCHS

2 Introduction

2.1 Content of this Document

This document contains information required to use the product in the relevant phases of the product life cycle. This may include information on the following:

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

i

Note

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

i

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 comprises the following parts:

- This document
- Datasheet

In addition, the documentation may comprise the following parts, if applicable:

- EU-type examination certificate
- EU declaration of conformity
- Attestation of conformity
- Certificates
- Control drawings
- Instruction manual
- Other 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.

2022-12

PEPPERL+FUCHS

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.

2022-12

PEPPERL+FUCHS

3 Technical Specifications

3.1 Explosion Protection

⟨Ex⟩ II 2G Ex eb q [ib IIC/IIB] IIC T4 Gb

⟨Ex⟩ II 2D Ex tb [ib] IIIC T135 °C Db

$-25°C \leq Ta \leq +60°C$

EU-Type Examination Certificate

IBExU18ATEX1051
IECEx IBE 18.0010

Manufacturer

Pepperl+Fuchs AG

Lilienthalstraße 200

68307 Mannheim, Germany

info@de.pepperl-fuchs.com

Figure 3.1

Note

The supply module comes with a pre-installed short set-up cable with M12 socket!

PEPPERL+FUCHS

3.2 Technical Data — Supply Module for 1-D Hand scanner with cable

	SK-IDM-Z1-160-BD- 1D-J1-DC-S-N	SK-IDM-Z1-160-BD- 1D-J1-DC-U-N	SK-IDM-Z1-160-BD- 1D-J1-AC-S-N	SK-IDM-Z1-160-BD- 1D-J1-AC-U-N
Description	Power supply for the intrinsically safe supply of the 1-D Hand scanner with cable IDM-Z1-160-D-1D-J1*, IDM-Z1-164-D-1D-J1-SU-P-N0 and the Bluetooth® base stations IDM-Z1-x61-B-J1* and IDM-Z1-x64-B-J1-BT-N0			
Electrical data				
Interfaces—field side (Ex e)	RS-232/RS-422	USB	RS-232/RS-422	USB
Interfaces—scanner side (Ex i)	RS-232	USB	RS-232	USB
Operating voltage (nominal)	24 VDC		230 VAC	
Voltage range	18 ... 30 VDC		90 ... 253 VAC	
Max. power consumption	7.1 W		16 W	
Frequency range	-		50 ... 60 Hz	
Power supply cable	1.5 mm²…2.5 mm² (AWG24…AWG14), 3-pin			
Data cable	0.2 mm² … 2.5 mm² (AWG24…AWG14), 4-pin	0.2 mm² … 2.5 mm² (AWG24…AWG14), 3-pin	0.2 mm² … 2.5 mm² (AWG24…AWG14), 4-pin	0.2 mm² … 2.5 mm² (AWG24…AWG14), 3-pin
Data cable max. length	15 m	5 m	15 m	5 m
Ambient conditions				
Operating temperature	-25°C to 60°C			
Storage temperature	-40°C to 60°C			
Relative humidity	95 %, non-condensing			
Enclosure material	Aluminum			
Mechanical data				
Degree of protection	IP64			
Dimensions (B x H x T)	140 mm x 250 mm x 56 mm			
Weight	Approx. 3.1 kg			

PEPPERL+FUCHS

3.3 Technical Data — Supply Module for 2-D Hand scanner with cable

	SK-IDM-Z1-260-D-2D-J1-DC-S-N	SK-IDM-Z1-260-D-2D-J1-DC-U-N	SK-IDM-Z1-260-D-2D-J1-AC-S-N	SK-IDM-Z1-260-D-2D-J1-AC-U-N
Description	Power supply for the intrinsically safe supply of 2-D Hand scanner with cable IDM-Z1-260-D-2D-J1* and IDM-Z1-264-D-2D-J1-S1-N-N0			
Electrical data				
Interfaces—field side (Ex e)	RS-232/RS-422	USB	RS-232/RS-422	USB
Interfaces—scanner side (Ex i)	RS-232	USB	RS-232	USB
Operating voltage (nominal)	24 VDC		230 VAC	
Voltage range	18 ... 30 VDC		90 ... 253 VAC	
Max. power consumption	7.1 W		16 W	
Frequency range	-		50 ... 60 Hz	
Power supply cable	1.5 mm²…2.5 mm² (AWG24…AWG14), 3-pin (Back-up fuse with miniature circuit breaker required)			
Data cable	0.2 mm²…2.5 mm² (AWG24…AWG14), 4-pin	0.2 mm²…2.5 mm² (AWG24…AWG14), 3-pin	0.2 mm²…2.5 mm² (AWG24…AWG14), 4-pin	0.2 mm²…2.5 mm² (AWG24…AWG14), 3-pin
Data cable max. length	15 m	5 m	15 m	5 m
Ambient conditions				
Operating temperature	-25°C to 60°C			
Storage temperature	-40°C to 60°C			
Relative humidity	95 %, non-condensing			
Enclosure material	Aluminum			
Mechanical data				
Degree of protection	IP64			
Dimensions (B x H x T)	140 mm x 250 mm x 56 mm			
Weight	Approx. 3.1 kg			

3.4 Use

The supply module is used for the intrinsically safe supply of devices.

The supply module makes it possible to supply power in the explosion-hazardous areas Zone 1 and Zone 21.

PEPPERL+FUCHS

4 System Structure

The supply module is an accessory that supplies power to the Pepperl+Fuchs Hand scanner with cable IDM-Z1-160-D-1D-J1*, IDM-Z1-260-D-2D-J1*, IDM-Z1-164-D-1D-J1-SU-P-N0 and IDM-Z1-264-D-2D-J1-S1-N-N0, as well as to the Bluetooth base stations IDM-Z1x61-B-J1-BT-N0 and IDM-Z1-x64-B-J1-BT-N0.

The corresponding system configurations of the supply module with the respective Hand scanners can be found in the manuals for the Pepperl+Fuchs IDM-Z1 handheld scanner series.

Warning!

The IP64 rating does not implement that the devices are suitable for outdoor applications. Standing water and environmental influences can lead to a failure of the device. For this reason, in case of outdoor applications the supply module must be installed in an appropriate enclosure.

PEPPERL+FUCHS

5 Commissioning

5.1 Mounting

Structure of the Supply Module

1. The supply module is fastened to a stable base using the four mounting holes at the corners of the base plate (1). The holes each have a diameter of 7 mm.
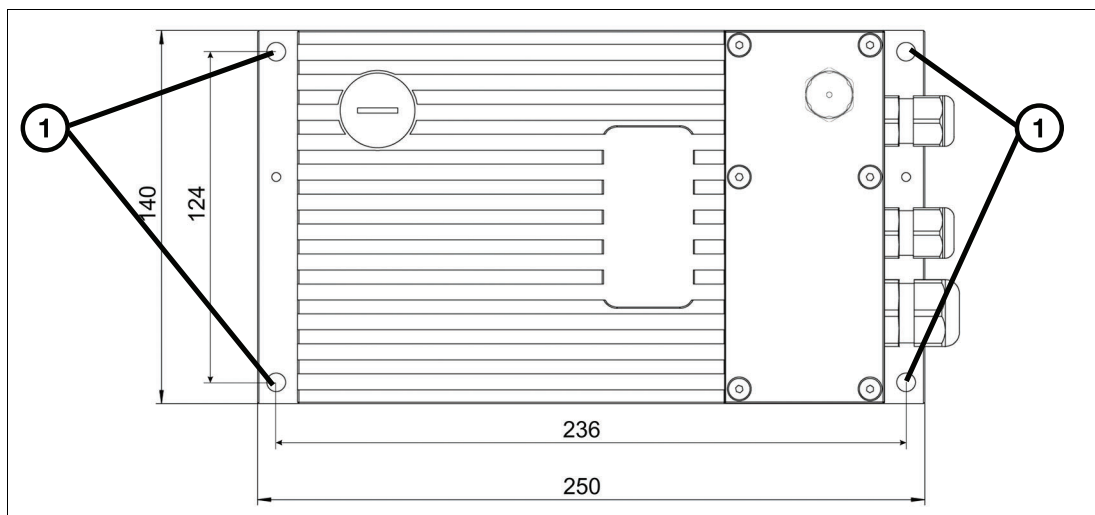

Figure 5.1

2. The connections for equipotential bonding (M5 x 10) are located on both the front and back of the supply module (2).
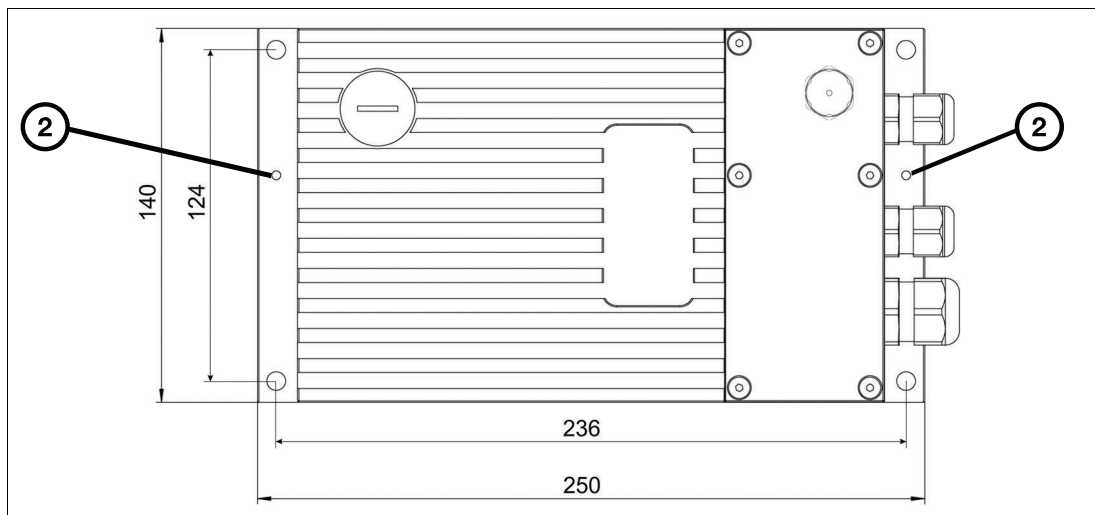

Figure 5.2

3. Intrinsically safe circuit is grounded.

⚠ **Warning!**

Noting the Equipotential Bonding

Equipotential bonding must be present for the entire duration while the intrinsically safe circuits are being set up!

PEPPERL+FUCHS

4. (1) Terminal compartment under covering fixture with continuous flat gasket
(2) Breather
(3) Cable gland M16 x 1.5 for consumers (incl. short set-up cable with M12 socket)
(4) Cable gland M16 x 1.5 for data transfer
(5) Cable gland M20 x 1.5 for voltage supply
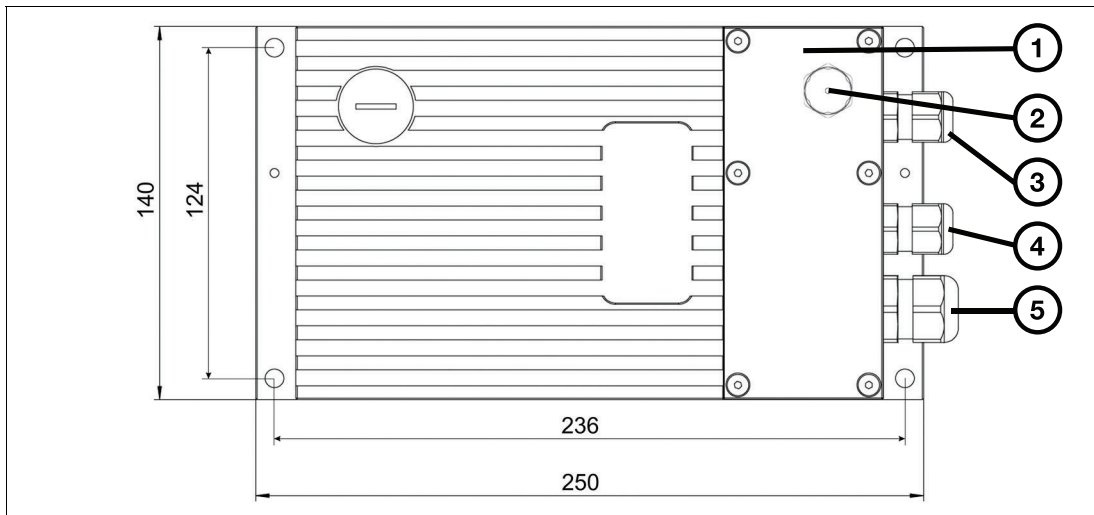
Figure 5.3

Figure 5.4

⚠ **Warning!**

Explosion-Hazardous Area

Do not open the enclosure in the explosion-hazardous area.
Before the device is put into operation in an explosion-hazardous area, it must
be ensured that the enclosure is completely closed again and screwed on
properly.

ℹ **Note**

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

2022-12

PEPPERL+FUCHS

5. The terminal assignment is located under the unscrewable opening on the front of the supply module.
(1) Ex e terminal compartment for connecting the voltage supply and the data cable
(2) Ex i terminal compartment for connecting the consumers

Figure 5.5

6. Rearview of the opening front of the supply module.
(1) Flat gasket
(2) Breather

Figure 5.6

PEPPERL+FUCHS
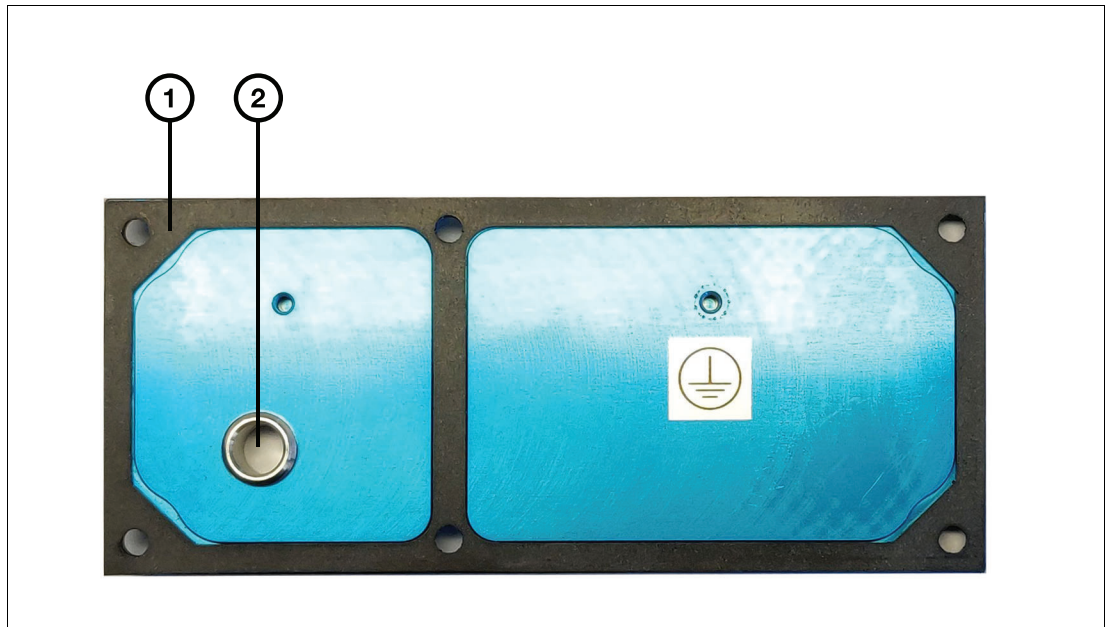
⚠ **Warning!**

The flat gasket of the Ex e terminal compartment must be reattached after opening!

Tighten all the 6 cover screws with 0.8 Nm.

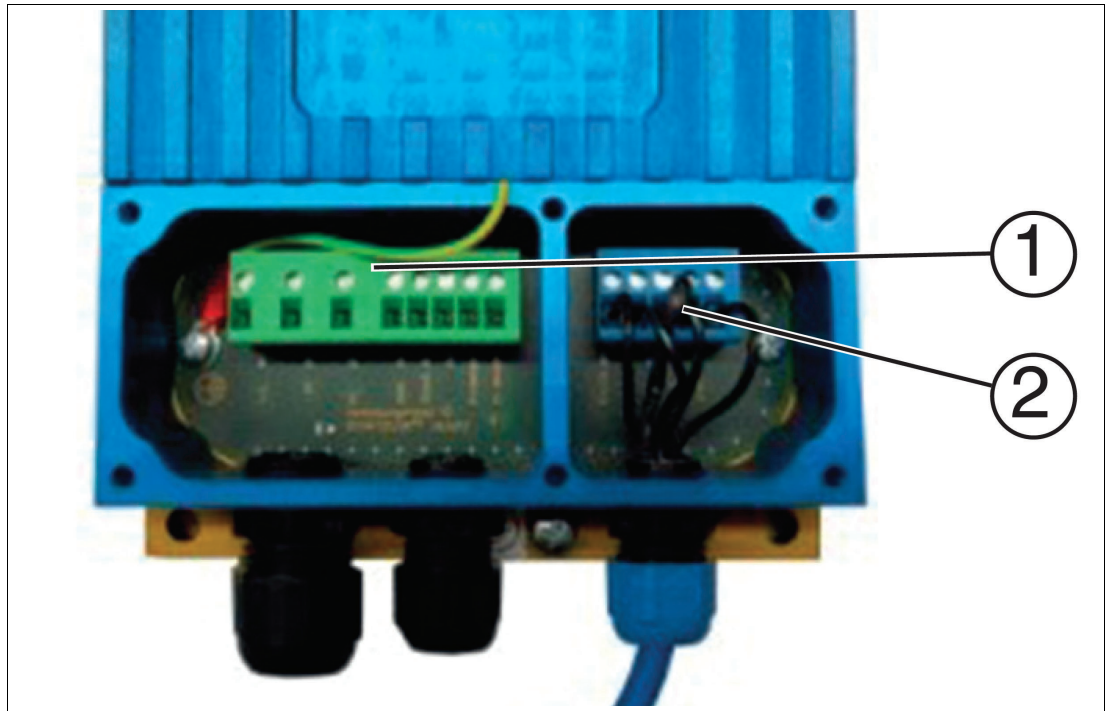## 5.2 Pinout in the Terminal Compartment SK-IDM-Z1-160-BD-1D-J1-DC-S-N and SK-IDM-Z1-260-D-2D-J1-DC-S-N
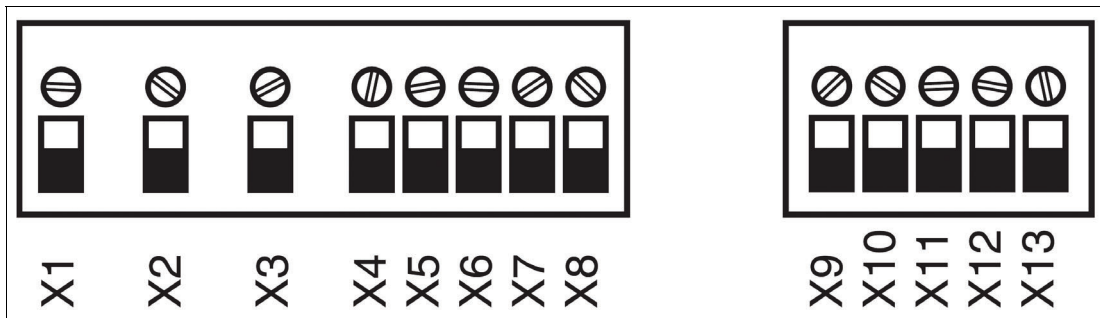
Figure 5.7

Assignment for Ex e Terminal Compartment

Terminal no.	Designation	Description
X1	+/- L	+ = 24 VDC
X2	-/N	- = 0 VDC
X3	PE	Protective earth
X4	GND	RS232
X5	TxD	RS232
X6	Shield	RS232/RS422
X7	T+	RS422/RS485
X8	T-	RS422/RS485

ℹ **Note**

RS485 connection: Only a point-to-point connection is possible. The transmission rate must be set to the same values on the receiver side as to the handheld barcode reader.

Assignment for Ex i Terminal Compartment

Terminal no.	Designation
X9	RxD
X10	GND
X11	PE
X12	GND
X13	+UB

PEPPERL+FUCHS

5.3 Pinout in the Terminal Compartment SK-IDM-Z1-160-BD-1D-J1-DC-U-N and SK-IDM-Z1-260-D-2D-J1-DC-U-N
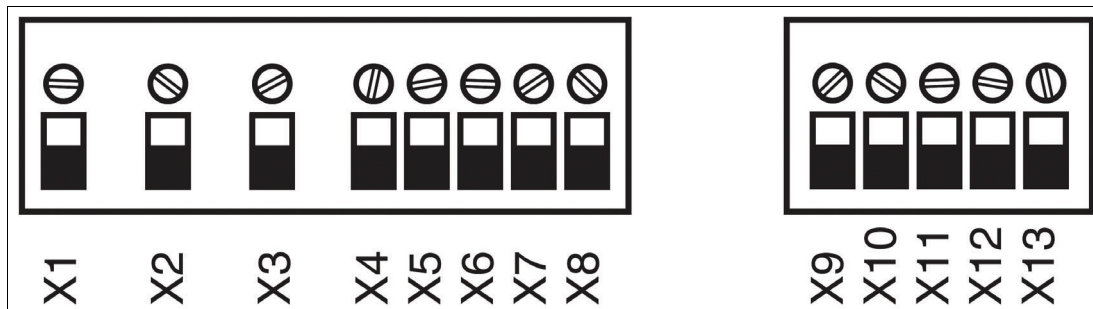
Figure 5.8

Assignment for Ex e Terminal Compartment

Terminal no.	Designation	Description
X1	+/- L	+ = 24 VDC
X2	-/N	- = 0 VDC
X3	PE	Protective earth
X4	GND	USB
X5	Shield	USB
X6	n.c.	
X7	D+	USB
X8	D-	USB

Assignment for Ex i Terminal Compartment

Terminal no.	Designation
X9	RxD
X10	GND
X11	PE
X12	GND
X13	+UB

PEPPERL+FUCHS

5.4 Pinout in the Terminal Compartment SK-IDM-Z1-160-BD-1D-J1-AC-S-N and SK-IDM-Z1-260-D-2D-J1-AC-S-N
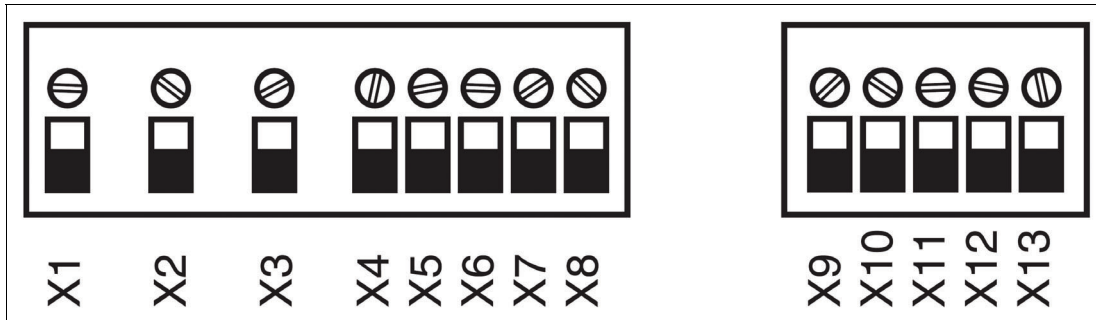
Figure 5.9

Assignment for Ex e Terminal Compartment

Terminal no.	Designation	Description
X1	+/- L	L = 100 VDC… 250 VDC
X2	-/N	N = Neutral conductor
X3	PE	Protective earth
X4	GND	RS232
X5	TxD	RS232
X6	Shield	RS232/RS422
X7	T+	RS422/RS485
X8	T-	RS422/RS485

Note

RS485 connection: Only a point-to-point connection is possible. The transmission rate must be set to the same values on the receiver side as to the Hand scanner.

Assignment for Ex i Terminal Compartment

Terminal no.	Designation
X9	RxD
X10	GND
X11	PE
X12	GND
X13	+UB

PEPPERL+FUCHS

5.5 Pinout in the Terminal Compartment SK-IDM-Z1-160-BD-1D-J1-AC-U-N and SK-IDM-Z1-260-D-2D-J1-AC-U-N
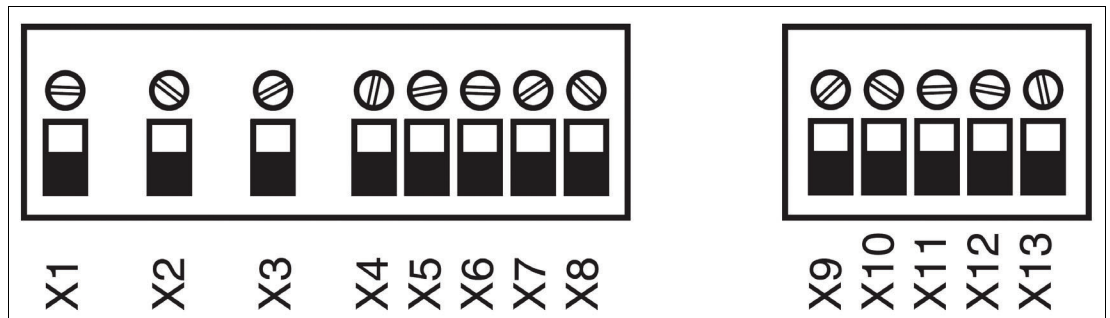
Figure 5.10

Assignment for Ex e Terminal Compartment

Terminal no.	Designation	Description
X1	+/- L	L = 100 VDC… 250 VDC
X2	-/N	N = Neutral conductor
X3	PE	Protective earth
X4	GND	USB
X5	Shield	USB
X6	n.c.	
X7	D+	USB
X8	D-	USB

Assignment for Ex i Terminal Compartment

Terminal no.	Designation
X9	RxD
X10	GND
X11	PE
X12	GND
X13	+UB

PEPPERL+FUCHS

6 Accessories

Designation	Description
Hand scanner with cable	
IDM-Z1-164-D-1D-J1-SU-P-N0	Hand scanner with cable for 1-D codes ATEX & IECEx Zone 1/21 Supports PDF417 barcode
IDM-Z1-264-D-2D-J1-S1-N-N0	Hand scanner with cable for 2-D codes ATEX & IECEx Zone 1/21
IDM-Z1-160-D-1D-J1-SU-N-N0	Hand scanner with cable for 1-D codes ATEX & IECEx Zone 1/21
IDM-Z1-160-D-1D-J1-SU-P-N0	Hand scanner with cable for 1-D codes ATEX & IECEx Zone 1/21 Supports PDF417 barcode
IDM-Z1-260-D-2D-J1-S1-N-N0	Hand scanner with cable for 2-D codes ATEX & IECEx Zone 1/21
Bluetooth Hand scanner	
IDM-Z1-164-M-1D-J1-BT-P-N0	Bluetooth Hand scanner for 1-D codes ATEX & IECEx Zone 1/21 Supports PDF417 barcode
IDM-Z1-264-M-2D-J1-BT-N-N0	Bluetooth Hand scanner for 2-D codes ATEX & IECEx Zone 1/21
IDM-Z1-161-M-1D-J1-BT-N-N0	Bluetooth Hand scanner for 1-D codes ATEX & IECEx Zone 1/21
IDM-Z1-161-M-1D-J1-BT-P-N0	Bluetooth Hand scanner for 1-D codes ATEX & IECEx Zone 1/21 Supports PDF417 barcode
IDM-Z1-261-M-2D-J1-BT-N-N0	Bluetooth Hand scanner for 2-D codes ATEX & IECEx Zone 1/21
Base station/charging cradle	
IDM-Z1-x64-B-J1-BT-N0	Bluetooth® base station/charging cradle ATEX & IECEx Zone 1/21 For IDMx64 Bluetooth Hand scanner
IDM-Z1-x64-B-N0-BT-N0	Bluetooth® base station/charging cradle No explosion protection For IDMx64 Bluetooth Hand scanner
IDM-Z1-x61-B-J1-BT-N0	Bluetooth® base station/charging cradle ATEX & IECEx Zone 1/21 For IDMx61 Bluetooth Hand scanner
IDM-Z1-x61-B-N0-BT-N0	Bluetooth® base station/charging cradle No explosion protection For IDMx61 Bluetooth Hand scanner
IDM-Z1-x61-C-N0-BT-N0	Charging cradle No explosion protection For IDMx61 Bluetooth Hand scanner
Supply Module	
SK-IDM-Z1-160-BD-1D-J1-DC-S-N0	Supply module for 1-D Hand scanner with cable & Bluetooth® base station ATEX & IECEx Zone 1/21 RS-232 connection, 24 VDC For IDM160-D-1D-J1* and IDMx61-B-J1*

PEPPERL+FUCHS

Designation	Description
SK-IDM-Z1-160-BD-1D-J1-DC-U-N0	Supply module for 1-D Hand scanner with cable & Bluetooth® base station ATEX & IECEx Zone 1/21 USB connection, 24 VDC For IDM160-D-1D-J1* and IDMx61-B-J1*
SK-IDM-Z1-160-BD-1D-J1-AC-S-N0	Supply module for 1-D Hand scanner with cable & Bluetooth® base station ATEX & IECEx Zone 1/21 RS-232 connection, 230 VAC For IDM160-D-1D-J1* and IDMx61-B-J1*
SK-IDM-Z1-160-BD-1D-J1-AC-U-N0	Supply module for 1-D Hand scanner with cable & Bluetooth® base station ATEX & IECEx Zone 1/21 USB connection, 230 VAC For IDM160-D-1D-J1* and IDMx61-B-J1*
SK-IDM-Z1-260-D-2D-J1-DC-S-N	Supply module for 2-D Hand scanner with cable ATEX & IECEx Zone 1/21 RS-232 connection, 24 VDC For IDM-Z1-260-D-2D-J1*
SK-IDM-Z1-260-D-2D-J1-DC-U-N	Supply module for 2-D Hand scanner with cable ATEX & IECEx Zone 1/21 USB connection, 230 VAC For IDM-Z1-260-D-2D-J1*
SK-IDM-Z1-260-D-2D-J1-AC-S-N	Supply module for 2-D Hand scanner with cable ATEX & IECEx Zone 1/21 RS-232 connection, 230 VAC For IDM-Z1-260-D-2D-J1*
SK-IDM-Z1-260-D-2D-J1-AC-U-N	Supply module for 2-D Hand scanner with cable ATEX & IECEx Zone 1/21 USB connection, 230 VAC For IDM-Z1-260-D-2D-J1*
PSU-IDM-Z1-x61-BC-N0-N0	Power supply for non-explosion-hazardous base station & charger No explosion protection For IDM-Z1-x61-B-N0-BT-N0 and IDM-Z1-x61-C-N0-BT-N0
Cordset for wired handheld scanner/supply module	
CBL-IDMx60-D-J1-S-S18-N0	RS-232 connection cable for 1-D/2-D Hand scanner with cable ATEX & IECEx Zone 1/21 1.8-m length, smooth For IDM-Z1-x60-D-*
CBL-IDMx60-D-J1-S-C38-N0	RS-232 connection cable for 1-D/2-D Hand scanner with cable ATEX & IECEx Zone 1/21 3.8-m length, spiral For IDM-Z1-x60-D-*
CBL-IDM160-D-J1-U-S18-N0	RS-232 connection cable for 1-D Hand scanner with cable ATEX & IECEx Zone 1/21 1.8-m length, smooth For IDM-Z1-160-D-*

PEPPERL+FUCHS

Designation	Description
CBL-IDM160-D-J1-U-C38-N0	RS-232 connection cable for 1-D Hand scanner with cable ATEX & IECEx Zone 1/21 3.8-m length, spiral For IDM-Z1-160-D-*
Cordset for base station/supply module	
CBL-IDMx61-B-N0-S-S18-N0	RS-232 connection cable for base station No explosion protection 1.8-m length, smooth For IDM-Z1-x61-B-N0*
CBL-IDMx61-B-N0-S-C38-N0	RS-232 connection cable for base station No explosion protection 3.8-m length, spiral For IDM-Z1-x61-B-N0*
CBL-IDMx61-B-N0-U-S18-N0	USB connection cable for base station No explosion protection 1.8-m length, smooth For IDM-Z1-x61-B-N0*
CBL-IDMx61-B-N0-U-C38-N0	USB connection cable for base station No explosion protection 3.8-m length, spiral For IDM-Z1-x61-B-N0*
CBL-IDMx61-B-J1-S-S18-N0	RS-232 connection cable for base station ATEX & IECEx Zone 1/21 1.8-m length, smooth For IDM-Z1-x61-B-J1*
CBL-IDMx61-B-J1-S-C38-N0	RS-232 connection cable for base station ATEX & IECEx Zone 1/21 3.8-m length, spiral For IDM-Z1-x61-B-J1*
CBL-IDMx61-B-J1-U-S18-N0	USB connection cable for base station ATEX & IECEx Zone 1/21 1.8-m length, smooth For IDM-Z1-x61-B-J1*
CBL-IDMx61-B-J1-U-C38-N0	USB connection cable for base station ATEX & IECEx Zone 1/21 3.8-m length, spiral For IDM-Z1-x61-B-J1*
Accessories	
SCANNER-HOLDER-IDMx6x-TRIPOD	Tripod holder for IDMx6x Hand scanner
SCANNER-HOLDER-IDMx6x-DESKTOP	Desktop holder for IDMx6x Hand scanner
SCANNER-HOLDER-U1-AG1-N0	Stainless steel holder for IDMx6x Hand scanner, compatible with AG1 surrounding enclosure
SCANNER-HOLDER-U1-XX00-N0	Stainless steel holder for IDMx6x Hand scanner, compatible with AG-XX00 surrounding enclosure
HOLDER-BRACKET-XX00-IDMx61-B-N0	Stainless steel bracket for mounting the base station IDM-Z1-x61-B-J1-BT-N0 onto the AG-XX00 surrounding enclosure
BAT-IDMx61-M	Replacement Li-ion battery For IDM-Z1-161-M* and IDM-Z1-261-M*
S-RN2/DB9-5-N0	RS-232 cable with SUB-D9 plug (female) and open cable ends with wire end ferrules, 5-m length

2022-12

PEPPERL+FUCHS

Designation	Description
S-RN2/DB9-20-N0	RS-232 cable with SUB-D9 plug (female) and open cable ends with wire end ferrules, 20-m length
S-UN2/USB-5-N0	USB cable with USB Type A plug (male) and open cable ends with wire end ferrules, 5-m length
DATL-IDM-DB-S-XX00-N0	Cordset for 1-D Hand scanner with cable IDM-Z1-160- D-1D-J1-S*, 2-D Hand scanner IDM-Z1-260-D-2D-J1-S* and the Bluetooth® base station IDM-Z1-x61-B-J1-BT-N0 to VisuNet GXP in the AG-XX00 surrounding enclosure Note: supports RS-232 scanner/base station only!
DATL-A3-1.5-1	Supply line for 90 VAC – 240-VAC supply 3 x 1.5 mm², diameter 8.1 mm Assembly 6 x 1.5-mm² wire end ferrules

PEPPERL+FUCHS

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