

Manual

PSU-IDM160-BD-1D-J1-*-N0

PSU-IDM260-D-2D-J1-*-S-N0

Power module



The latest version of the General Terms of Supply for Products and Services in the Electronics Industry set out by the German Electrical and Electronic Manufacturers' Association (ZVEI) and the "Extended Reservation of Proprietorship" supplementary clause apply to this document.

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1. Important Notes About The Instruction Manual

1.1. Safety Information

This document contains symbols to identify warning messages and information messages.

Warnings

You always find warning messages whenever hazards could result from your actions. It is essential that you observe these warning messages to ensure your personal safety and to prevent property damage.

Warning messages are shown in descending order according to the risk level, as follows:



DANGER!

This symbol warns you of an immediate and present danger.

If you do not observe this warning message, there is a risk of personal injury and even death.



WARNING!

This symbol warns you of a potential fault or hazard.

If you do not observe this warning message, there is a risk of personal injury or severe property damage.



CAUTION!

This symbol warns you of a potential fault.

Failure to observe this warning message may result in the product or any systems and plants connected to it malfunctioning or suffering a complete failure.

Information messages



Note

This symbol draws your attention to important information.



Example

This symbol indicates an example.



Tip

This symbol indicates a tip is provided.



Handling instructions

This symbol highlights an action. You are prompted to perform an action or sequence of actions.

1.2. Notes About The Manual

Please read the manual carefully before initial commissioning.

The instruction manual contains important information on the function and safety regulations. If you do not observe this information, the intended use in explosion-hazardous areas cannot be guaranteed.

Observe the information given in this manual during commissioning and use of the product.

There is no responsibility for actuality. Pepperl+Fuchs GmbH reserves the right to make changes to this document.

Prior to use, make sure that you have the latest version of the user manual. Check the homepage www.pepperl-fuchs.com or contact your contact person at Pepperl+Fuchs for clarification.

The figures in this manual are for illustration purposes only, and may differ from the actual design in its appearance.



DANGER!

Do not make any changes to the device that are not intended or been approved by Pepperl+Fuchs.

Improper handling of the power module can void the type approval to operate in explosion-hazardous areas.

Non-compliance excludes warranty claims.

1.3.General Warning Messages



WARNING!

-
- Only operate the devices when assembled.
 - Do not clean the device in explosion-hazardous areas. Do not wipe it dry.
 - Switch off the device immediately if you believe that the device can no longer be operated safely after damaging effects or abnormalities in general (ingress of water, fluids, exposure to temperatures outside the specified range etc.).
 - Note general statutory regulations or directives on occupational safety, accident prevention regulations and environmental protection laws, e.g., Ordinance on Industrial Safety and Health (BetrSichV).
 - Do not open the device.
 - You may not make any changes to the device. You may not exchange or replace any components. Explosion protection is no longer guaranteed for non-specified components.
 - Ensure safe handling during use through adequate stability and freedom of movement.
 - Immediately remove the device from the explosion-hazardous area in the event of damage to the housing.
 - IEC 60079-19 and IEC 60079-17 stipulate that you as the operator of electrical plants in explosion-hazardous areas are obligated to appoint an electrician to check that these plants are in perfect condition.
 - Do not insert any objects into the housing or other openings of the handheld scanner. Openings on the device must not be obstructed, blocked, or covered.
 - Dispose of the device and the associated components correctly, as required by law, by an approved company.
-



Note

- Note the relevant deployment and operational regulations for electrical plants (e.g., Directive 99/92/EC, Directive 2014/34/EU or the applicable national regulations, IEC 60 079-14, and the series DIN VDE 0100).
 - As the operator, perform maintenance and repair work for the device properly in explosion-hazardous areas.
-

Maintenance

No ongoing maintenance is required when the mounting instructions, the ambient conditions and proper operation are observed.

Inspection

The operator must appoint an electrician to check an electrically powered device in explosion-hazardous areas, to ensure it is in correct condition (IEC 60079-19 and IEC 60079-17).

Repairs

Repairs may only be performed by the manufacturer or persons commissioned and trained for this purpose.



WARNING!

The device is factory-sealed. It may be opened only by trained and qualified personnel at the factory.

Commissioning

Before you put the device into operation, check whether all the necessary components are available.

2. Technical Data

2.1. Explosion Protection

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

⊕ II 2D Ex tb [ib] IIIC T135 °C Db

-25 °C ≤ Ta ≤ +60 °C

Test certificate

IBExU18ATEX1051

IECEX IBE 18.0010

Manufacturer

Pepperl+Fuchs GmbH
Lilienthalstraße 200
68307 Mannheim, Germany

info@de.pepperl-fuchs.com



2.2. Technical Data–Power Module for 1-D Handheld Readers

	PSU-IDM160-BD-1D-J1-DC-S-N0	PSU-IDM160-BD-1D-J1-DC-U-N0	PSU-IDM160-BD-1D-J1-AC-S-N0	PSU-IDM160-BD-1D-J1-AC-U-N0
Description	Power supply for the intrinsically safe supply of wired 1-D barcode readers IDM160-D-1D-J1* and Bluetooth base station IDMx61-B-J1*			
Electrical Data				
Interfaces field side (Ex e)	RS232/RS422	USB	RS232/RS422	USB
Interfaces scanner side (Ex i)	RS232	USB	RS232	USB
Operating voltage (nominal)	24 VDC		230 VAC	
Voltage range	18 VDC ... 30 VDC		90 VAC ... 253 VAC	
Max. power consumption	7.1 W		16 W	
Frequency range	-		50 Hz ... 60 Hz	

	PSU-IDM160-BD-1D-J1-DC-S-N0	PSU-IDM160-BD-1D-J1-DC-U-N0	PSU-IDM160-BD-1D-J1-AC-S-N0	PSU-IDM160-BD-1D-J1-AC-U-N0
Power supply cable	0.2 mm ² ... 2.5 mm ² (AWG24 ... AWG14), 3-pin			
Data cable	0.2 mm ² ... 2.5 mm ² (24 AWG ... 14 AWG), 3-pin	0.2 mm ² ... 2.5 mm ² (24 AWG ... 14 AWG), 4-pin	0.2 mm ² ... 2.5 mm ² (24 AWG ... 14 AWG), 3-pin	0.2 mm ² ... 2.5 mm ² (24 AWG ... 14 AWG), 4-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			
Housing material	Aluminum			
Mechanical Data				
Degree of protection	IP64			
Dimensions (W x H x D)	140 mm x 250 mm x 56 mm			
Weight	approx. 3.1 kg			

2.3. Technical Data—Power Module for 2-D Handheld Readers

	PSU-IDM260-D-2D-J1-DC-S-N0	PSU-IDM260-D-2D-J1-AC-S-N0
Description	Power supply for the intrinsically safe supply of wired 2-D barcode readers IDM260-D-2D-J1*	
Electrical Data		
Interfaces field side (Ex e)	RS232/RS422	
Interfaces scanner side (Ex i)	RS232	
Operating voltage (nominal)	24 VDC	230 VAC
Voltage range	18 VDC ... 30 VDC	90 VAC ... 253 VAC
Max. power consumption	7.1 W	16 W

	PSU-IDM260-D-2D-J1-DC-S-N0	PSU-IDM260-D-2D-J1-AC-S-N0
Frequency range	-	50 Hz ... 60 Hz
Power supply cable	0.2 mm ² ... 2.5 mm ² (AWG24 ... AWG14), 3-pin	
Data cable	0.2 mm ² ... 2.5 mm ² (24 AWG ... 14 AWG), 3-pin	
Data cable max. length	15 m	
Ambient conditions		
Operating temperature	-25 °C to 60 °C	
Storage temperature	-40 °C to 60 °C	
Relative humidity	95% non-condensing	
Mechanical Data		
Housing material	Aluminum	
Degree of protection	IP64	
Dimensions (W x H x D)	140 mm x 250 mm x 56 mm	
Weight	approx. 3.1 kg	

2.4.Use

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

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

3. SYSTEM STRUCTURE

The power module is an accessory that supplies power to the wired Pepperl+Fuchs handheld scanners IDM160-D-1D-J1*, IDM260-D-2D-J1* as well as to Bluetooth base station IDMx61-B-J1-BT-N0 and charging cradle IDMx61-C-BT-N0.

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

4. Commissioning

4.1. Installation



Structure of the power module

1. The power 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.

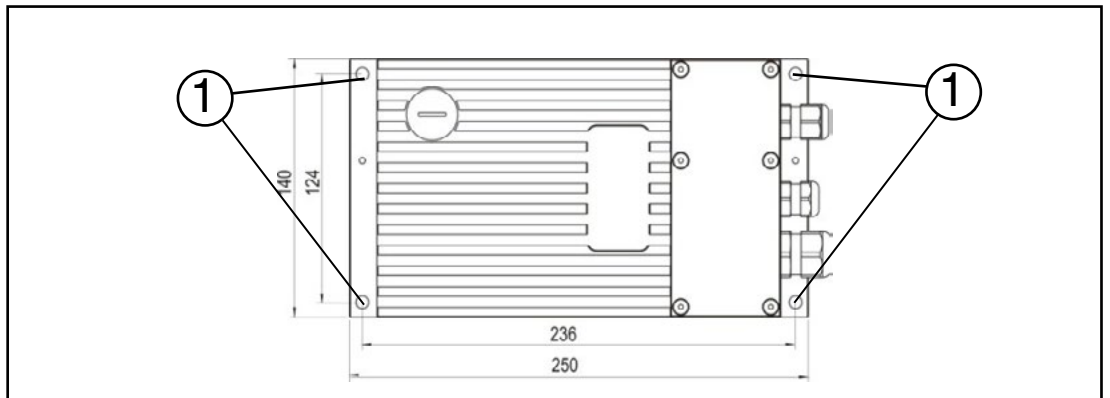


Figure 1. Mounting points for installation

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

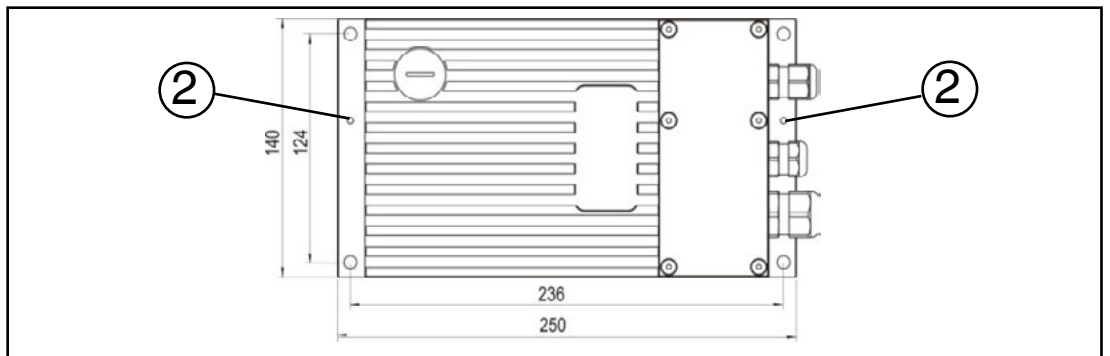


Figure 2. Equipotential bonding connection



WARNING!

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

- 3.
- ① Terminal compartment under covering fixture
 - ② Cable gland M16 x 1.5 for consumers
 - ③ Cable gland M16 x 1.5 for data transfer
 - ④ Cable gland M20 x 1.5 for power supply

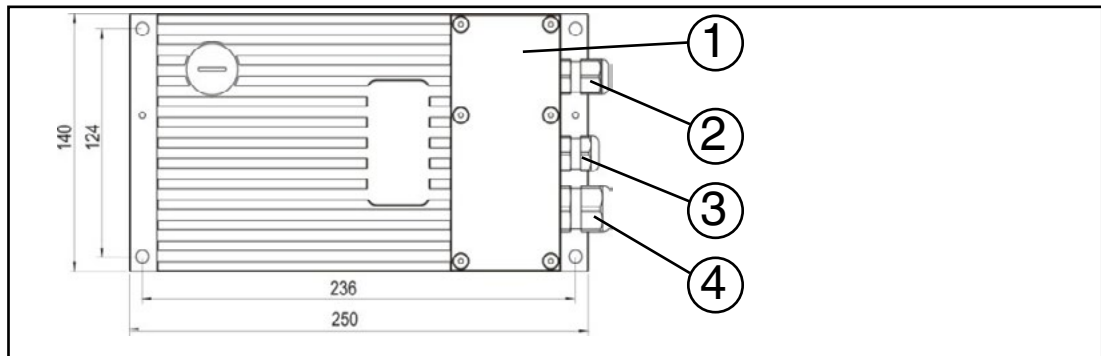


Figure 3. Terminal compartment and cable glands



WARNING!

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.



Note

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

- 4.
- The terminal assignment is located under the unscrewable opening on the front of the power module.
- ① **Ex e** terminal compartment to connect the power supply and the data line
 - ② **Ex i** terminal compartment to connect the consumers

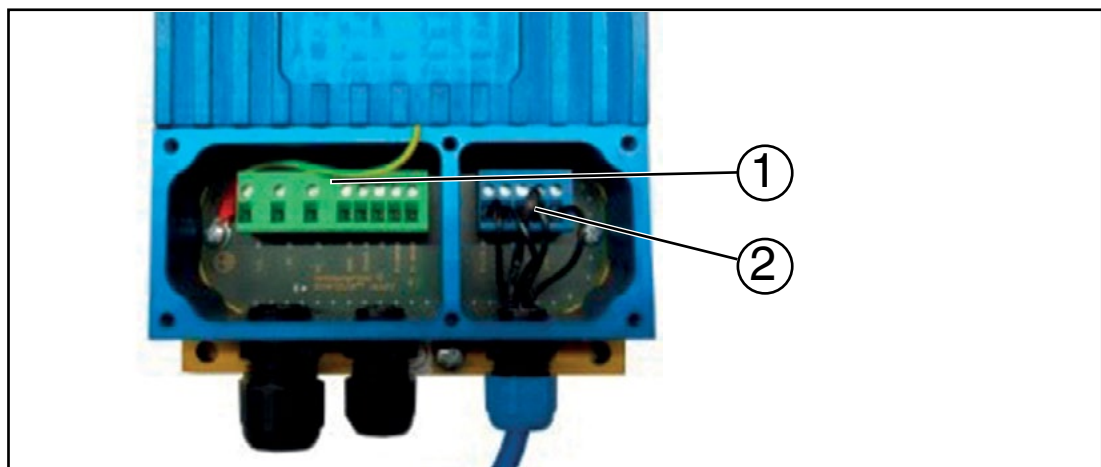


Figure 4. Terminal compartment

4.2. Pin assignment in the terminal compartment PSU-IDM160-BD-1D-J1-DC-S-N0 and PSU- IDM260-D-2D-J1-DC-S-N0

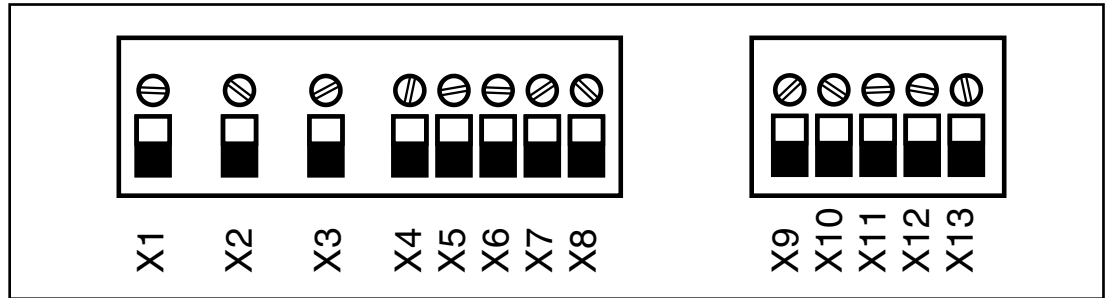


Figure 5. Terminal blocks in the terminal compartment

Assignment for Ex e terminal compartment		
Terminal no.	Designation	Description
X1	+/- L	+ = 24 V DC
X2	-/N	- = 0 V DC
X3	PE	Protective earth
X4	GND	RS232
X5	TxD	RS232
X6	Shield	RS232/RS422
X7	T+	RS422
X8	T-	RS422

Assignment for Ex i terminal compartment	
Terminal no.	Designation
X9	RxD
X10	GND
X11	PE
X12	GND
X13	+UB

4.5. Pin assignment in the terminal compartment PSU-IDM160-BD-1D-J1-DC-U-N0

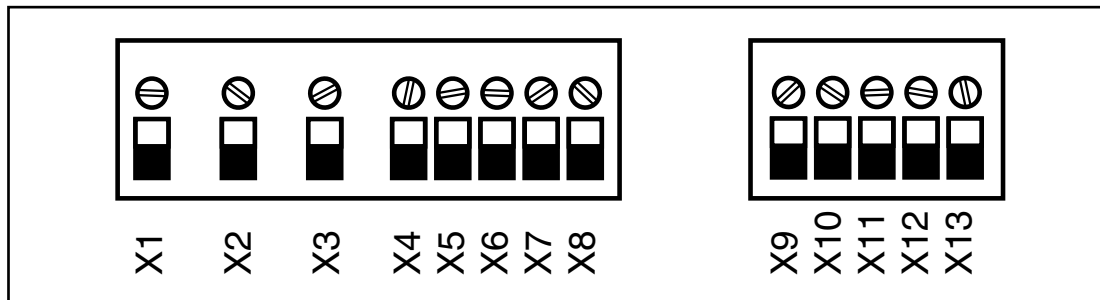


Figure 6. Terminal blocks in the terminal compartment

Assignment for Ex e terminal compartment		
Terminal no.	Designation	Description
X1	+/- L	+ = 24 V DC
X2	-/N	- = 0 V DC
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

4.6. Pin assignment in the terminal compartment PSU-IDM160-BD-1D-J1-AC-S-N0 and PSU- IDM260-D-2D-J1-DC-S-N0

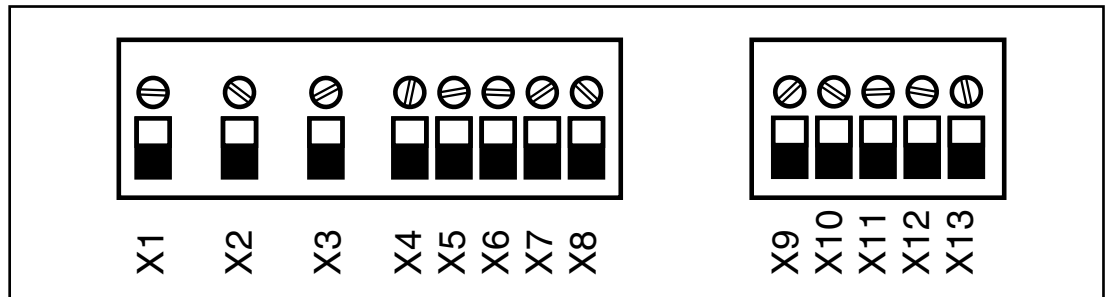


Figure 7. Terminal blocks in the terminal compartment

Assignment for Ex e terminal compartment		
Terminal no.	Designation	Description
X1	+/- L	L = 100 ... 250 V DC
X2	-/N	N = Neutral conductor
X3	PE	Protective earth
X4	GND	RS232
X5	TxD	RS232
X6	Shield	RS232/RS422
X7	T+	RS422
X8	T-	RS422

Assignment for Ex i terminal compartment	
Terminal no.	Designation
X9	RxD
X10	GND
X11	PE
X12	GND
X13	+UB

4.7. Pin assignment in the terminal compartment PSU-IDM160-BD-1D-J1-AC-U-N0

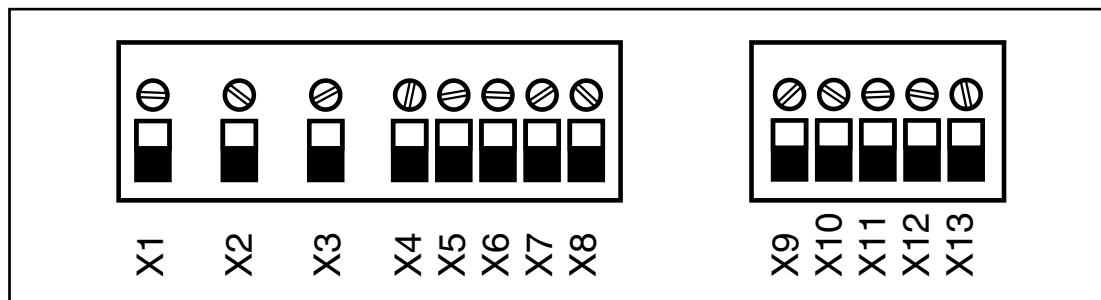


Figure 8. Terminal blocks in the terminal compartment

Assignment for Ex e terminal compartment		
Terminal no.	Designation	Description
X1	+/- L	L = 100 ... 250 V DC
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

5. Accessories

Designation	Description
Wired handheld barcode scanner	
IDM160-D-1D-J1-SU-N-N0	Wired handheld scanner for 1-D codes ATEX & IECEx Zone 1/21
IDM160-D-1D-J1-SU-P-N0	Wired handheld scanner for 1-D codes ATEX & IECEx Zone 1/21 Supports PDF417 barcode
IDM260-D-2D-J1-S1-N-N0	Wired handheld scanner for 2-D codes ATEX & IECEx Zone 1/21
Wireless handheld barcode scanner	
IDM161-M-1D-J1-BT-N-N0	Bluetooth handheld scanner for 1-D codes ATEX & IECEx Zone 1/21
IDM161-M-1D-J1-BT-P-N0	Bluetooth handheld scanner for 1-D codes ATEX & IECEx Zone 1/21 Supports PDF417 barcode
IDM261-M-2D-J1-BT-N-N0	Bluetooth handheld scanner for 2-D codes ATEX & IECEx Zone 1/21
Base station/charging cradle	
IDMx61-B-J1-BT-N0	Bluetooth base station/charging cradle ATEX & IECEx Zone 1/21 For IDMx61 Bluetooth handheld scanner
IDMx61-B-N0-BT-N0	Bluetooth base station/charging cradle No explosion protection For IDMx61 Bluetooth handheld scanner
IDMx61-C-N0-BT-N0	Charging cradle No explosion protection For IDMx61 Bluetooth handheld scanner
Power module	
PSU-IDM160-BD-1D-J1-DC-S-N0	Power module for wired 1-D handheld scanner & Bluetooth base station ATEX & IECEx Zone 1/21 RS232 connection, 24 VDC For IDM160-D-1D-J1* and IDMx61-B-J1*
PSU-IDM160-BD-1D-J1-DC-U-N0	Power module for wired 1-D handheld scanner & Bluetooth base station ATEX & IECEx Zone 1/21 USB connection, 24 VDC For IDM160-D-1D-J1* and IDMx61-B-J1*
PSU-IDM160-BD-1D-J1-AC-S-N0	Power module for wired 1-D handheld scanner & Bluetooth base station ATEX & IECEx Zone 1/21 RS232 connection, 230 VAC For IDM160-D-1D-J1* and IDMx61-B-J1*
PSU-IDM160-BD-1D-J1-AC-U-N0	Power module for wired 1-D handheld scanner & Bluetooth base station ATEX & IECEx Zone 1/21 USB connection, 230 VAC For IDM160-D-1D-J1* and IDMx61-B-J1*

Designation	Description
PSU-IDM260-D-2D-J1-DC-S-N0	Power module for wired 2-D handheld scanner ATEX & IECEx Zone 1/21 RS232 connection, 24 VDC For IDM260-D-2D-J1*
PSU-IDM260-D-2D-J1-AC-S-N0	Power module for wired 2-D handheld scanner ATEX & IECEx Zone 1/21 RS232 connection, 230 VAC For IDM260-D-2D-J1*
PSU-IDMx61-BC-N0-N0	Power supply for non-explosion-hazardous base station & charger No explosion protection For IDMx61-B-N0-BT-N0 and IDMx61-C-N0-BT-N0
Cordset for wired handheld scanner/power module	
CBL-IDMx60-D-J1-S-S18-N0	RS232 connection cable wired 1-D/2-D handheld scanner ATEX & IECEx Zone 1/21 1.8 m length, smooth For IDMx60-D-*
CBL-IDMx60-D-J1-S-C38-N0	RS232 connection cable wired 1-D/2-D handheld scanner ATEX & IECEx Zone 1/21 3.8 m length, spiral For IDMx60-D-*
CBL-IDM160-D-J1-U-S18-N0	RS232 connection cable wired 1-D handheld scanner ATEX & IECEx Zone 1/21 1.8 m length, smooth For IDM160-D-*
CBL-IDM160-D-J1-U-C38-N0	RS232 connection cable wired 1-D handheld scanner ATEX & IECEx Zone 1/21 3.8 m length, spiral For IDM160-D-*
Cordset for base station/power module	
CBL-IDMx61-B-N0-S-S18-N0	RS232 connection cable base station No explosion protection 1.8 m length, smooth For IDMx61-B-N0*
CBL-IDMx61-B-N0-S-C38-N0	RS232 connection cable base station No explosion protection 3.8 m length, spiral For IDMx61-B-N0*
CBL-IDMx61-B-N0-U-S18-N0	USB connection cable base station No explosion protection 1.8 m length, smooth For IDMx61-B-N0*
CBL-IDMx61-B-N0-U-C38-N0	USB connection cable base station No explosion protection 3.8 m length, spiral For IDMx61-B-N0*
CBL-IDMx61-B-J1-S-S18-N0	RS232 connection cable base station ATEX & IECEx Zone 1/21 1.8 m length, smooth For IDMx61-B-J1*

Designation	Description
CBL-IDMx61-B-J1-S-C38-N0	RS232 connection cable base station ATEX & IECEx Zone 1/21 3.8 m length, spiral For IDMx61-B-J1*
CBL-IDMx61-B-J1-U-S18-N0	USB connection cable base station ATEX & IECEx Zone 1/21 1.8 m length, smooth For IDMx61-B-J1*
CBL-IDMx61-B-J1-U-C38-N0	USB connection cable base station ATEX & IECEx Zone 1/21 3.8 m length, spiral For IDMx61-B-J1*
Accessories	
SCANNER-HOLDER-ID-Mx6x-TRIPOD	Tripod holder for IDMx6x handheld scanner
SCANNER-HOLDER-ID-Mx6x-DESKTOP	Desktop holder for IDMx6x handheld scanner
SCANNER-HOLDER-U1-AG1-N0	Stainless steel holder for IDMx6x handheld scanner, compatible with AG1 surrounding enclosure
SCANNER-HOLDER-U1-XX00-N0	Stainless steel holder for IDMx6x handheld scanner, compatible with AG-XX00 surrounding enclosure
HOLDER-BRACKET-XX00-IDMx61-B-N0	Stainless steel bracket for mounting the base station IDMx61-B-J1-BT-N0 to the AG-XX00 surrounding enclosure
BAT-IDMx61-M	Replacement battery li-ion For IDM161-M* and IDM261-M*
S-RN2/DB9-5-N0	RS232 cable with SUB-D9 plug (female) and open cable ends with wire end ferrules, 5 m length
S-RN2/DB9-20-N0	RS232 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 wired 1-D handheld scanner IDM160-D-1D-J1-S*, 2-D handheld scanner IDM260-D-2D-J1-S* and the Bluetooth base station IDMx61-B-J1-BT-N0 to VisuNet GXP in the AG-XX00 housing Note: supports RS232 scanner/base station only!
DATL-A3-1.5-1	Supply line for 90 – 240 VAC supply 3 x 1.5 mm ² , diameter 8.1 mm Assembly 6 x 1.5 mm ² wire end ferrules

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:

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