

### Description



The power pack was developed specially for direct installation in hazardous areas and it is ATEX-certified

The power pack is a permanently installed piece of electrical operating equipment. It serves to supply power to intrinsically safe operating equipment and components inside hazardous areas (e.g. the BCS 3800<sup>ex</sup> hand-held scanner). The power pack is installed in areas designated for the use of devices from Equipment Group II, Category 2G and 2D.

It is used exclusively in combination with operating equipment that meets the requirements for Overvoltage Category I.

The power pack was developed specially for use in hazardous areas in Zones 1 and 21. The power pack may not be installed in Zone(s) 0 / 20.

The system supplies intrinsically safe supply voltage at the output and converts serial data to RS232 and RS422.

At the input side there is a choice of two data interfaces (RS232 and RS422); for the supply voltage three variants are available.

- AC 100 V to 250 V with RS232 and RS422 interface
- DC 24V with RS232 and RS422 interface
- DC 12 V with RS232 and RS422 interface

It is not necessary to install it in an Ex e or Ex tD enclosure.

### Explosion Protection

- Ex protection type**
- II 2G Ex e q [ib] IIC T4
  - II 2D Ex tD A21 IP64 T135°C  
-20 °C ≤ Ta ≤ +60 °C

0044

- Certification**
- IBExU 09 ATEX 1091  
For more details please refer to the Declaration of EC Conformity

- Standards**
- EN 60079-0:2006 EN 60079-5:2007
  - EN 60079-7:2007 EN 60079-11:2007
  - EN 61241-0:2006 EN 61241-1:2004
  - EN 61000-6-2:2005 EN 61000-6-4:2007

- Directives**
- 94/9/EC
  - 2002/95/EC
  - 2004/108/EC

### Safety Instructions

If it is installed incorrectly without protection, it may malfunction and the Ex protection can be lost.

The power pack must be connected and assembled/disassembled by qualified personnel who are authorised and trained to assemble electrical components in hazardous areas.

Use in areas other than those specified or the alteration of the product by anyone other than the manufacturer will exempt BARTEC from liability for defects or from any further liability.

The generally applicable statutory rules and other binding directives relating to workplace safety, accident prevention and environmental protection must be adhered to.

The power pack may only be used if it is clean and free of damage.

### Marking

Particularly important points in these instructions are marked with a symbol:



**Danger!**

*Non-observance leads to death or serious physical injury. The necessary safety measures must be taken.*



**Caution!**

*Warning of damage to property and financial and penal disadvantages (e.g. loss of guarantee rights, liability etc.).*



**Attention**

*Important instructions and information on preventing disadvantageous behaviour.*

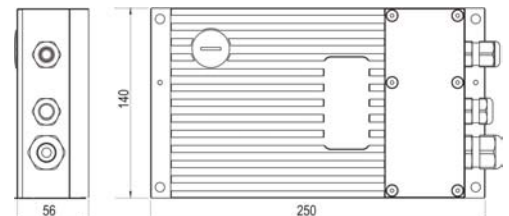


**Note**

*Important instructions and information on effective, economical and environmentally compatible handling.*

### Technical Data

- Enclosure material** Aluminium
- Protection class (EN 60 529)** IP64
- Electrical connections** Connecting terminal 2.5 mm<sup>2</sup>, fine-stranded
- Dimensions (W x H x D)** 140 mm x 250 mm x 56 mm



- Weight without connection cable** approx. 3.1 kg
- Ambient temperature range** -20 °C to +60 °C
- Storage and transport temperature** -20 °C to +60 °C outside the hazardous area
- Relative air humidity** 5 to 95% non-condensing

### Electrical input data

Type	Supply voltage	Power consumption
17-21BB-1700	AC 90 V to 253 V, 50 to 60 Hz	3.3 W (max. 6.6 W)
17-21BB-1701	DC 24 V ± 25 %	3.7 W (max. 7.1 W)
17-21BB-1702	DC 12 V ± 10 %	4 W (max. 16 W)

### Electrical output data

- Maximum fault voltage  $U_m = 253 V$
- Maximum output voltage  $U_o = 5.5 V$
- Maximum output current  $I_o = 440 mA$
- Internal resistance  $R_i = 25 \Omega$
- Maximum output power  $P_o = 1.25 W$  (trapezoidal characteristic curve)
- Maximum external capacitance  $C_o = 55.0 \mu F$
- Maximum internal capacitance  $C_i = 2.2 \mu F$
- Maximum external capacitance  $L_i = 0.1 mH$

### Electrical Data Interface

Interface		Connecting terminal	Range
RS 232	Only transmitter TxD	X4, X5	up to 15 m
RS 232 TTL	Only receiver RxD (0 5.5 V)	X9, X10	up to 15 m
RS 422	Only transmitters	X7, X8	up to 1000 m

### Assembly and Commissioning



**Attention**

Any work on explosion-protected operating equipment may only be done by authorised persons using original spare parts and working in accordance with the latest developments in technology. The relevant regulations must be observed. Please direct any questions you may have to BARTEC GmbH.



**Danger!**

When using electrical systems, the relevant installation and operation regulations, such as e.g. Directive 1999/92/EC, Directive 94/9EC, Ordinance on industrial health and safety (BetSichV, EN 60079-14, the DIN VDE 0100 series or other applicable national standards or regulations must be observed. The operator of an electric plant in a hazardous environment must keep the operating equipment in an orderly condition, operate it correctly, monitor it and do the required maintenance and repairs.

On account of the risk of dangerous electrostatic charging, wear suitable clothes and footwear. Do not use any rubber gloves or suchlike.

If the power pack is stored in a cold environment, condensation may occur at the site of installation. Only components without condensation may be fitted.



**Caution!**

Furthermore, avoid the effects of heat higher or lower than the specified temperature range.

**This enclosure is factory-sealed. Do not open it!**  
Exception: terminal connection chamber



**Danger!**

**Disconnect the terminal connection chamber from voltage before opening it.**



**Caution!**

The user may not modify the device in any way. Components may not be changed or replaced. If components other than those specified are used, the protection against explosions can no longer be assured.

Make sure the power pack is securely installed on a stable supporting surface. Choose a site of installation where the power pack will not be at risk from falling objects or impact.

### Fixing to a stable supporting surface

The four mounting holes on the Power Supply unit's baseplate make safe assembly easier. See fig. 1 for the drilling pattern. It is not necessary to open the terminal connection chamber for assembly.

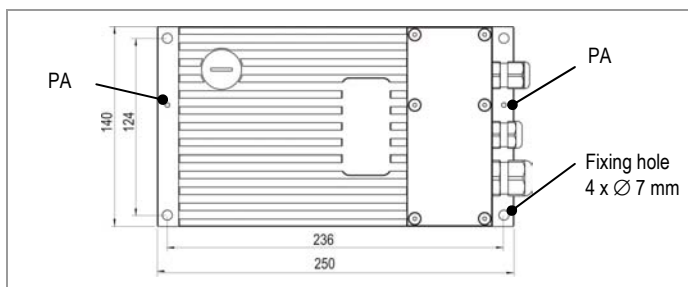


Fig. 1

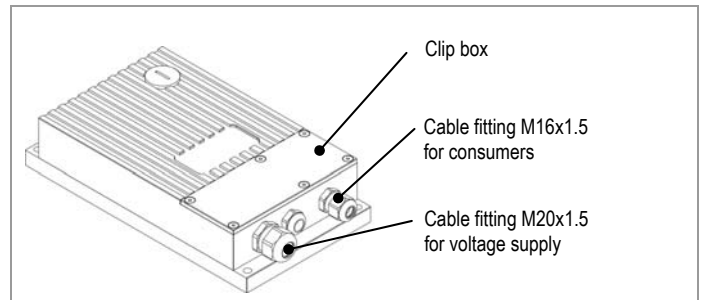


Fig. 2



**Caution!**

The supply cable must be selected so that it satisfies the thermal and mechanical requirements in the area of application. It is important not to damage core insulation during installation.

### Rated connection capacity of the spring-loaded terminals

Permissible core cross-sections	
Conductor cross-section rigid	0.2 mm <sup>2</sup> to 2.5 mm <sup>2</sup>
Conductor cross-section flexible	0.2 mm <sup>2</sup> to 2.5 mm <sup>2</sup>
Conductor cross-section flexible with wire-end ferrule without plastic cover	0.25 mm <sup>2</sup> to 1.5 mm <sup>2</sup>
Conductor cross-section flexible with wire-end ferrule with plastic cover	0.25 mm <sup>2</sup> to 1.5 mm <sup>2</sup>
Conductor cross-section AWG/kcmil	24 to 14

### Permissible connection cable diameters

Cable gland Ex e M20x1.5 (black)	6 - 13 mm
Cable gland Ex e M16x1.5 (black)	4 - 9 mm

### Terminals for external conductors

In the GasEx area the EN 60079-14: 2008 (Explosive Atmospheres - Part 14: Electrical Installations Design, Selection and Erection) must be observed when connecting the external conductors to the terminals.

In the DustEx area the EN 61241-14: 2004 (Electrical Apparatus for Use in the Presence of Combustible Dust. Part 14: Selection and Erection) must be observed).

The conductors must be connected in accordance with the terminal connection diagram.

### Installation

- (1) Use a screwdriver to loosen and remove the screws from the terminal connection chamber's cover plate.
- (2) Feed the voltage supply conductor through the cable gland (M20x1.5).
- (3) Feed the conductor for load (terminals X9 - X13) and host system (terminals X4 - X8) through the cable gland (M16x1.5).
- (4) Connect the voltage supply conductor as shown in the terminal connection plan (terminals X1 to X3).
- (5) Connect the conductor for load (terminals X9 - X13) and host system (terminals X4 - X8) as shown in the terminal connection plan.

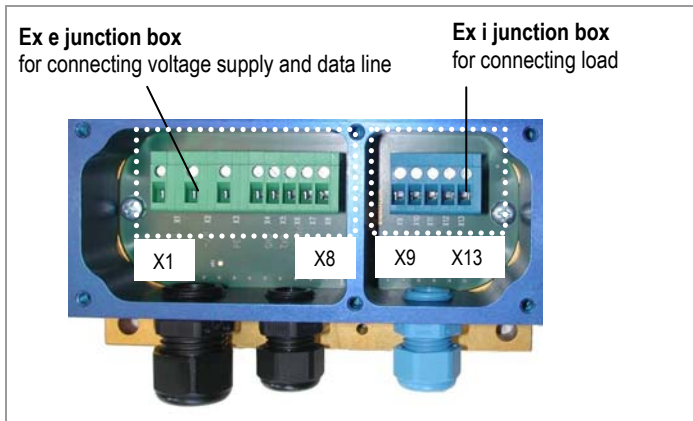


Fig. 3

### Terminal connection plan Ex e

Terminal	Marking	Description	Type/Note
X1	+/-L	L = AC 100 V bis 250 V + = DC 24 V + = DC 12 V	17-21BB-1700 17-21BB-1701 17-21BB-1702
X2	-/N	N = Neutral conductor - = Minus - = Minus	17-21BB-1700 17-21BB-1701 17-21BB-1702 internally connected to PE
X3	PE	PE	-
X4	GND	GND RS-232	internally connected to PE
X5	TxD	TxD RS-232	-
X6	Shield	Shield RS-232/RS-422	internally connected to PE
X7	T+	T+ RS-422	-
X8	T-	T- RS-422	-

### Terminal connection plan Ex i

Terminal	Marking	Description	Type/Note
X9	RxD	RxD RS-232	
X10	GND	GND RS-232	internally connected to PE
X11	PE	Shield	internally connected to PE
X12	GND	GND	internally connected to PE
X13	+UB	Intrinsically safe output voltage	

- (6) Check the connections and terminal assignment.
- (7) Close the cover on the terminal connection chamber and tighten the screws to finger-tightness.
- (8) Connect conductor to load and host system.
- (9) Connect the voltage supply conductor to the all-pole mains disconnecting switch or fuse.

#### Equipotential bonding conductor

The equipotential bonding conductor must be connected to the potential equalisation bonding (fig. 1). Since the intrinsically safe circuits are galvanically connected to earth, there must be equipotential bonding throughout the entire course of setting up intrinsically safe circuits.

#### Before commissioning check that:

- The device has been installed in compliance with regulations.
- The device is not damaged.
- The connection has been established properly.
- The terminal connection chamber is closed.

### Commissioning

- Connect supply voltage.



Disconnect the terminal connection chamber from voltage before opening.

### Maintenance

No maintenance is required if the device is operated appropriately and the instructions relating to installation and ambient conditions are observed.

**Dust-EX:** Dust deposits on and in the immediate vicinity of the enclosure must be removed at regular intervals.

### Repairs

Any work on explosion-protected operating equipment may only be done by authorised persons using original spare parts and working in accordance with the latest developments in technology. The relevant regulations must be observed. Please direct

If you wish to send in a defective device for repair, please read the RMA procedure guidance first. Then fill in and sign the RMA (Return Merchandise Authorisation) form and send it to our "Retouren Center" any questions you may have to BARTEC GmbH.

Email: [services@bartec.de](mailto:services@bartec.de)  
Fax: +49 7931 597-119

We cannot guarantee any contractually agreed processing times for devices that are sent in without an RMA number.

The RMA guide and the RMA form are available on our homepage for downloading.

<http://www.bartec-group.de>  
Quality and culture  
RMA form

Have you any questions? Write us an e-mail or call us.

E-mail: [services@bartec.de](mailto:services@bartec.de)  
Phone: +49 7931 597-444

### Disposal

The power pack contains metal parts, plastic parts and electronic components. The statutory requirements for electrical scrap must be observed therefore (e.g. disposal by an approved disposal company).

### Order Number

#### Power Pack

- with supply voltage AC 100 V to 250 V → Type 17-21BB-1700
- with supply voltage DC 24 V → Type 17-21BB-1701
- with supply voltage DC 12 V → Type 17-21BB-1702

### Service address

BARTEC GmbH Phone: +49 7931 597-0  
Max-Eyth-Straße 16 Fax: +49 7931 597-119  
97980 Bad Mergentheim  
Germany

Erklärung der Konformität  
Declaration of Conformity  
Attestation de conformité

N° 11-21BB-7C0001

**BARTEC**

BARTEC GmbH  
Max-Eyth-Straße 16  
97980 Bad Mergentheim  
Germany



Wir

**BARTEC GmbH,**

erklären in alleiniger Verantwortung, dass das Produkt

**Versorgungseinheit für Handscanner BCS3800<sup>ex</sup>**

We

declare under our sole responsibility that the product

**Power Pack for hand scanner BCS3800<sup>ex</sup>**

Nous

attestons sous notre seule responsabilité que le produit

**Unité d'alimentation pour lecteur de code-barres BCS3800<sup>ex</sup>**

Typenbezeichnung : 17-21BB-1700  
: 17-21BB-1701  
: 17-21BB-1702

auf das sich diese Erklärung bezieht den Anforderungen der folgenden Richtlinien (RL) entspricht

**ATEX-Richtlinie 94/9/EG**

**EMV-Richtlinie 2004/108/EG**

**RoHS-Richtlinie 2002/95/EG**

und mit folgenden Normen oder normativen Dokumenten übereinstimmt

EN 60079-0:2006

EN 60079-5:2007

EN 60079-7:2007

**Kennzeichnung**

II 2G Ex eq [ib] IIC T4  
II 2D Ex tD A21 IP64 T135°C  
-20 °C ≤ T<sub>a</sub> ≤ +60 °C

**Verfahren der EG-Baumusterprüfung IBExU09ATEX1091**

**CE 0044**

to which this declaration relates is in accordance with the provision of the following directives (D)

**ATEX-Directive 94/9/EC**

**EMC-Directive 2004/108/EC**

**RoHS Directive 2002/95/EC**

and is in conformity with the following standards or other normative documents

EN 60079-11:2007

EN 61241-0:2006

EN 61241-1:2004 und CENELEC-Cor.:2006

**Marking**

**Procedure of Ex-Type Examination**

se référant à cette attestation correspond aux dispositions des directives (D) suivantes

**ATEX-Directive 94/9/CE**

**CEM-Directive 2004/108/CE**

**RoHS-Directive 2002/95/CE**

et est conforme aux normes ou documents normalifs ci-dessous

EN 61000-6-2:2005

EN 61000-6-4:2007

**Marquage**

**Procédure d'examen CE de type**

Bad Mergentheim, den 05.11.2009

ppa. Ewald Warmuth

Geschäftsleitung / General Manager