

# SPECIFICATION & APPROVALS

## **CUSTOMER:**

PowerConnections P/N: BCA

DESCRIPTION: Battery Charger Adapter

DATE: 12 Mar 2022

Revision: I

Submission Sample Quantity: 10 Pieces

**SUPPLIER SPECIFICATION SUBMISSION**

Date of Application	10 Mar 2022	Specification No.	700-0001
Supplier's Name	PowerConnections	Supplier Code	BCA
Part Name	Battery Charger Adapter	Part No	

**Tick the relevant box "  "**

Reason for Submission

1. New application

2. New part(s) is added to accepted specification

3. Revision of accepted specification  
(Revision requested by  customer Or  supplier)


Revision / Change

1. The specification attached to this sheet does not deviate from the customer specification

2. Revision(s) within the limits of customer specification is proposed. Revision proposal(s) listed below.


3. Revision(s) beyond the limits of customer specification is proposed. Revision proposal(s) listed below. However, all other items contained within the specification are identical to the customer specification. Revision(s) shall be marked with a triangle "Δ" in the specification attached.

Revision No.	Date	Revision Description	Reason for Revision
A	27-02-07	First issue	
B	31-08-10	Revision of Details	Changes to Fuse, Pictures
C	21-06-19	Correction of name of product, fuse details changed to SEM only, certification details and links to validate added, addition of marking and dimensional drawing	RoHS & WEEE regulations change in scope, missing reference to battery chargers in section 1, missing reference to certificates in approvals section, and missing drawing.
D	25-09-22	Fuse data added	Alternative fuses available
E	04-01-22	Base marking changed to include UKCA logo	Introduction of UKCA rating, replaces CE marking in the UK

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TITLE	Plugtop Converter Plug	DRAWN BY	CHECKED BY	APPROVED BY
Part No. BCA	SPECIFICATION NO. 700-0003			
REVISION E				

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### 1.0 Application

This Specification defines the performance for the Battery Charger Converter PlugΔ, which is designed for the battery chargers with Euro Plug (CEE7).

### 2.0 Name/Part Number

Name: Battery Charger Adapter

Part Number: BCA

### 3.0 Shape and Dimensions

See Below (Section 15)

### 4.0 Rating

Voltage: AC 250V ~ 50Hz

Current: 2.5 A

Ambient Working Temperature: -5 + 70°C

Storage Temperature: -40 + 80°C 90%RH

### 5.0 Safety Specifications – Approvals

Plug: BSI Kitemark Licence No. KM 52467

Fuse: ASTA Diamond Mark Licence No.500


Standards

Plug: BS 5733 & Part of BS 1363-

Fuse: BS1362


For BSI Kite Mark Licence validation visit <https://www.bsigroup.com/en-GB/Product-Directory/>

For ASTA Diamond Mark Validation visit <http://www.astabeab.com/buyers-by-number.asp>

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**6.0 Electrical Strength Test**

No.	Test	Clause in Standard	Result	Description of test 6 pieces are subjected to this series of test
6.1	Provision for cables and Cords	19.1 BS1363-5	Pass	A CEE7 Euro Plug is fitted into a BCA and the CEE7 cord is subjected to 25 pulls lasting is with a force of 30N, no more than 2mm of displacement is allowed. The cord is then subjected to the pulling force and at 3750v to ensure no breakdown in connection.
6.2	Resistance to ageing	14.2 BS1363-5	Pass	Samples to be kept in a cabinet for 7 days (168 hours) at 70°C±2°C, then tested for stickiness or greasiness by with dry rough cloth wrapped around a fore-finger, force 5N.
6.3	Insulation Resistance	15.2 BS1363-5	Pass	500V DC is applied and after 60s the insulation resistance is checked and must be not less than: a) 5MΩ between parts of opposite polarity, b) 5MΩ between parts of opposite polarity connected together and other insulated parts including the earth.
6.4	Electric Strength	15.1 BS1363-5	Pass	2000V AC 50Hz is applied and after 60s the Voltage drop is checked and must be within 3% RMS of the applied Voltage: a) between live parts of opposite polarity b) between live parts of opposite polarity connected together and other insulated parts including the earth.

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### 7.0 Mechanical Strength Test

No.	Test	Clause in Standard	Result	Description of test 4 pieces are subjected to this series of test
7.1	Tumble Barrel test	20.2 BS1363-5	Pass	The product is subjected singly to 1000-drop test in the apparatus as shown in the (BS 1363-5) standard Figure 17.
7.2	Fuse insertion test	20.3.1 BS1363-5	Pass	A solid stainless steel fuse link is inserted 20 times, to test the strength of the clips.
7.3	Temperature rise test	16 BS1363-5	Pass	Current of 2.75 amps is passed for 4 hours at 250 volts or until stable, the temperature rise is then measured
7.3.1	Box Ambient	For each sample		23.4°C, 23.2°C, 22.9°C, 23.1°C
7.3.2	Line Clamp temp rise	For each sample		2.8K, 2.1K, 1.7K max. temp rise permissible 52K
7.3.3	Neutral Clamp temp rise	For each sample		2.6K, 2.1K, 1.5K max. temp rise permissible 52K
7.3.4	Line Contact temp rise			6.4K, 4.1K, 3.7K max. temp rise permissible 52K
7.3.5	Neutral Contact temp rise			5.8K, 4.7K, 2.8K max. temp rise permissible 52K
7.3.6	Accessible external surface temp rise	For each sample		2.8K, 2.1K, 1.4K max. temp rise permissible 52K


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**8.0 Construction Tests**

No.	Test	Clause in Standard	Result	Description of test 3 pieces are subjected to this series of test
8.1	Accessibility to live parts	11.1 BS5733	Pass	With the unit assembled as in normal use a probe B to BS3042: 1992 is supplied with a force of 5N whilst a voltage of 45V is supplied to the live parts via an electrical indicator. No access permissible.
8.2	Lid to Base security	11.9 BS5733	Pass	With the parts at 70°C±5° C a force of 60N is applied to the cover fixing screw, no damage or impairment of function to have occurred.
8.3	Resistant to Heat	22.1.3 BS1363-1	Pass	With the parts at 70°C±5° C a force of 20N is applied to the plug in the jaws of the apparatus shown in Figure 23, no damage or impairment of function to have occurred, shown by re-testing insulation resistance and electric strength, and must fit the Figure 5 gauge.
8.4	Resistant to Heat	22.3 BS1363-5	Pass	Ball pressure test using the apparatus shown in Figure 24, test temperature at 75°C±5° C, the force of 20N is applied for 60 mins after an initial period of 10 mins. The sample is then cooled by immersion in water at room temp and the indentation caused by the ball measured, this must be less than 2mm in diameter.


**9.0 Glow Wire Tests**

No.	Test	Clause in Standard	Result	Description of test 3 pieces are subjected to this series of test
9.1	Resistance to Abnormal Heat	23.2 BS1363-1	Pass	A glow wire of 750°C is applied to all the insulating surfaces there must be no visible flames or glowing or these must extinguish within 30s of removal of the glow wire.

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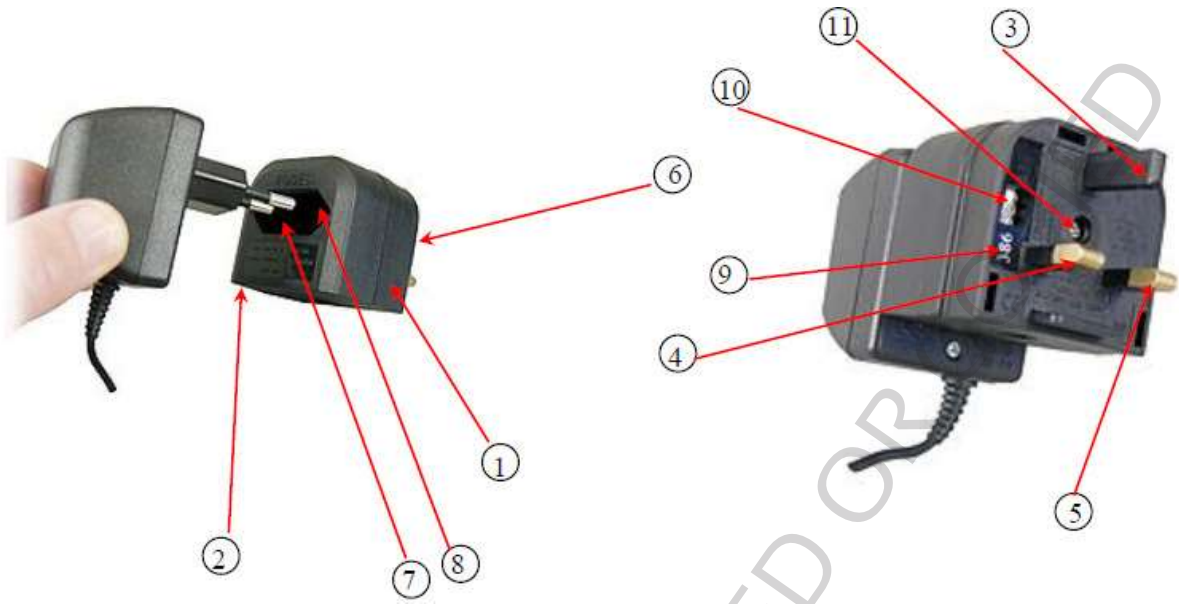
**10.0 Construction Tests**

No.	Test	Clause in Standard	Result	Description of test 3 pieces are subjected to this series of test
10.1	Construction of plug	12.2 BS1363-1	Pass	Critical dimensions of the plug must not exceed the dimensions given in Figure 4a. Compliance check using the gauge as shown in Figure 5.
10.2	Flexibility of pins	12.8.11 BS1363-1	Pass	Using the apparatus as shown in Figure 8 pins are tested with force of 4.2 to 4.4N applied 25mm from the engagement face, the pins must not deflect by more than 3°30'. The results on the pins were <1°. After this test the parts are again checked again checked using the Figure 5 gauge.

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11.0 Component Name



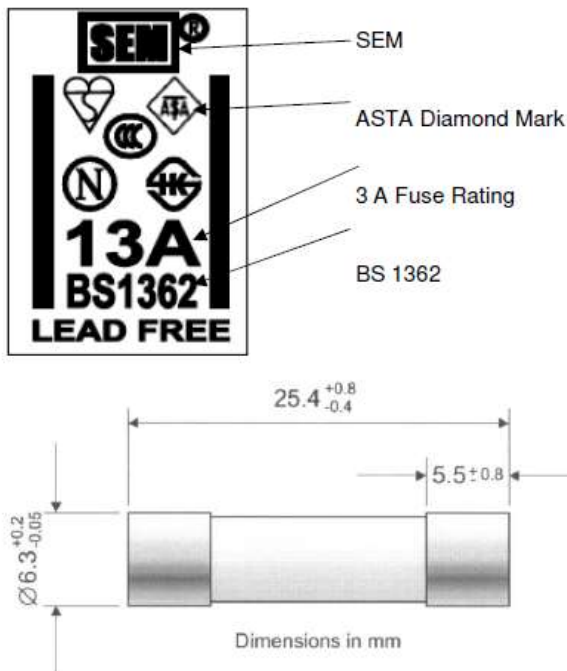
No.	Test	Material
1	Base	Polypropylene LG Lupol GP1007 FC
2	Cover	Polypropylene LG Lupol GP1007 FC
3	Earth Pin	Nylon 66 30% Glass Filled - Rhodia A30H2V25
4	Live Pin	Brass (Universal) with Nylon 66 Sleeve Dow 21SPC
5	Neutral Pin	Brass (Universal) with Nylon 66 Sleeve Dow 21SPC
6	Live Clip, Fuse Clip	Phosphor Bronze Taiwan VPN170-190
7	Neutral Clip	Phosphor Bronze Taiwan VPN170-190
8	Insert	Polypropylene LG Lupol GP1007 FC
9	Fuse Holder	Nylon 66, Dow 21SPC
10	Fuse	Group Talent (SEM) 3A, 5A, 10A (ASTA, BSI) Δ
11	Screw	Plain or Tamperproof Steel Screw with Zinc and Clear Pacification -Luen Tai

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### 12.0 Fuse Specification

SEM (Group Talents Ltd)

Marking



**Designation:**

- 1 A - SEM 11-01A
- 2 A - SEM 11-02A
- 3 A - SEM 11-03A & SEM 12-03A
- 5 A - SEM 11-05A & SEM 12-05A
- 7 A - SEM 11-07A
- 10 A - SEM 11-10A & SEM 12-10A
- 13 A - SEM 11-13A & SEM 12-13A

**Rating**

240 Va.c. 50 Hz, 1, 2, 3, 5, 7, 10, 13 Amperes

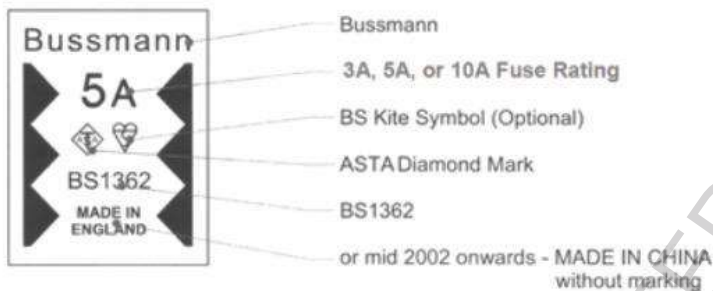
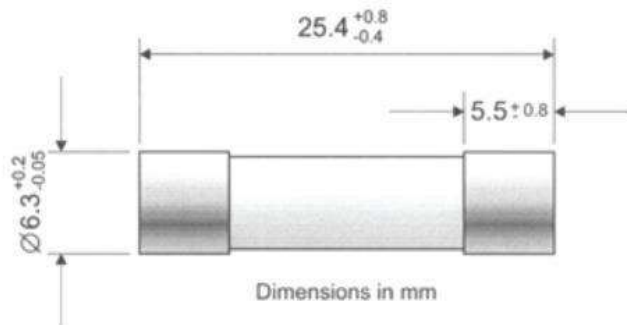
**Breaking Capacity**

6 kA r.m.s

**Rated Power loss**

Less than 1 Watt

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Print	Block		Print Colour
	Computer number	Rating	
FI820227	2A	Black	
FI820228	3A	Red	
FI820229	5A	Black	
FI820230	10A	Black	
FI820231	13A	Brown	

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BSI362 SS167	BSI362 SS167	BSI362 SS167	BSI362 SS167	BSI362 SS167
3A	5A	7A	10A	13A
LEAD FREE	LEAD FREE	LEAD FREE	LEAD FREE	LEAD FREE

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13.0 Installation Procedure



Fig 1




Fig 2

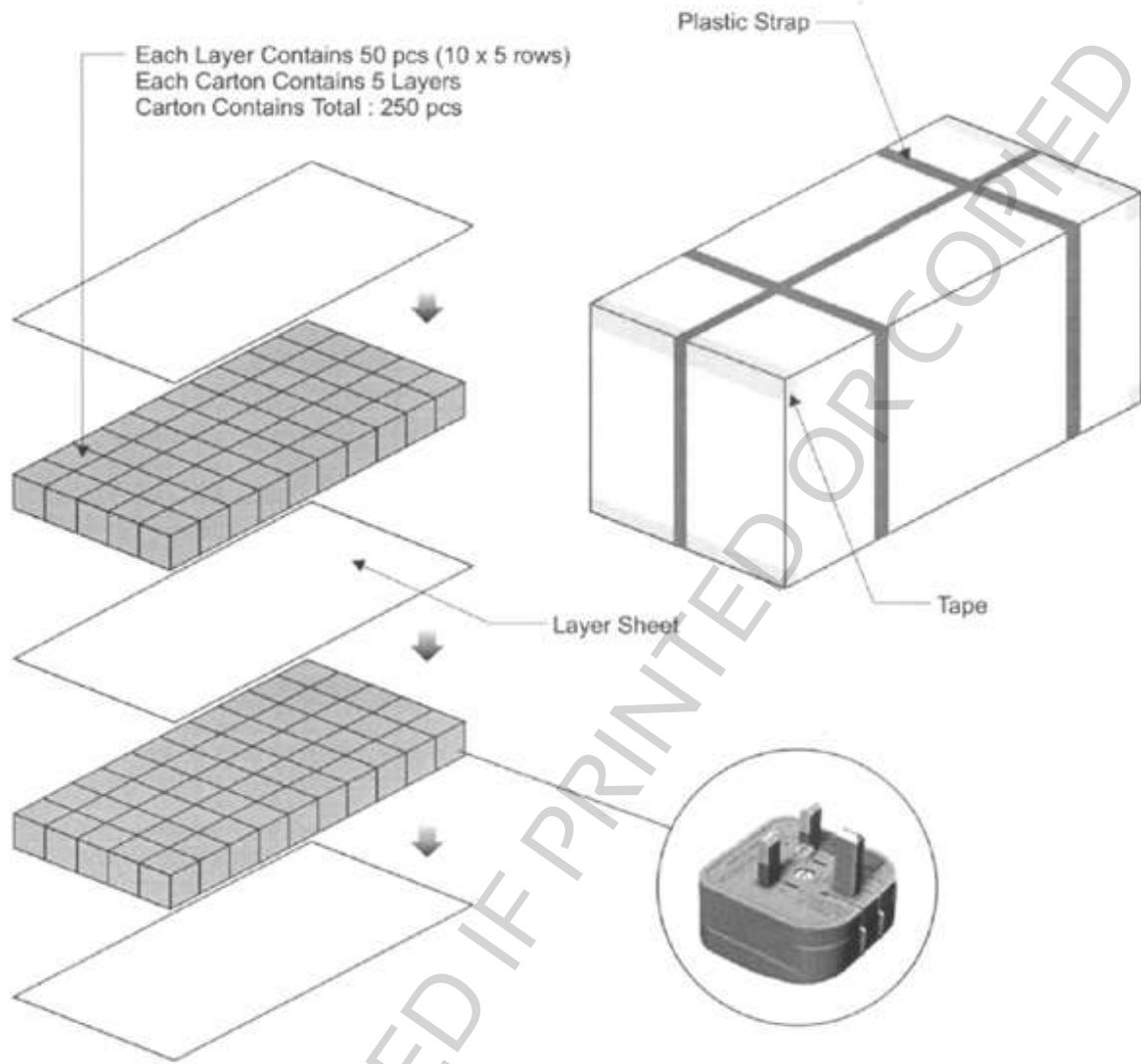


Fig 3

Insert the VDE Plug as shown and tighten the screw on the base to 0.6Nm. (6.12 Kgf.cm)  
 Check that VDE plug is correctly fitted by trying to remove it.  
 Now ready for use.

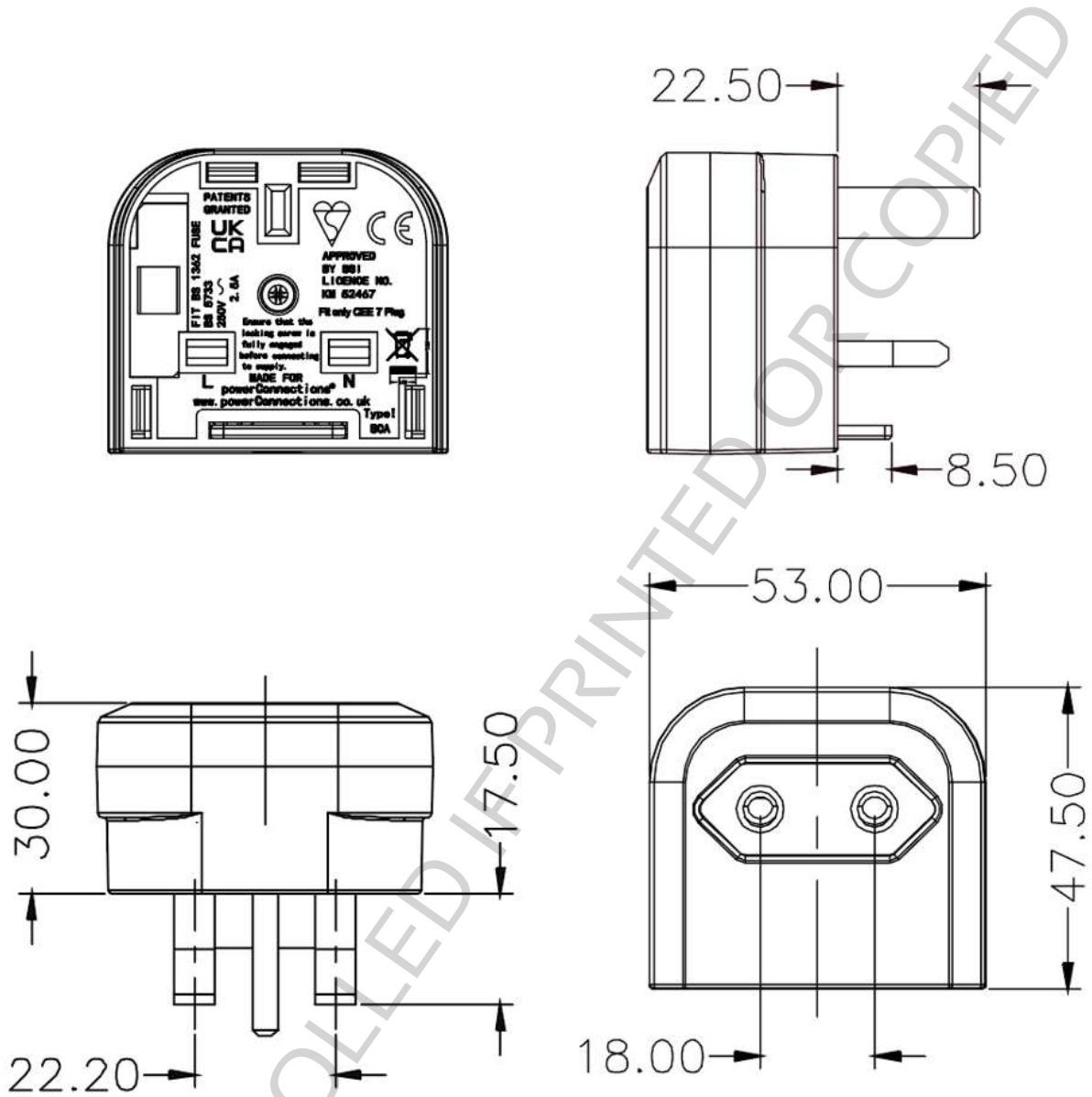
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**14.0 Packing Method**




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15.0 Dimensional Drawing and Markings



DO NOT SCALE FROM DRAWING  
Unless otherwise stated, dimensions are mm

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