

SPECIFICATION FOR APPROVAL

Customer : *RCS Components LTD*
 Product name : **AC ADAPTER (电源适配器)**
 Customer Model No. :
 Customer Part No. :
 Supplier Model No. : **FBP045-120S350J2**
 Supplier Part No. :

CUSTOMER APPROVED SIGNATURE

Approved by:	Checked by:	Tested by:
Explain: Please return to us "SPECIFICATION FOR APPROVAL" with your approved signatures. (承认书确认后请回签一份)		

Supplier approval signature:

Prepared by:	Checked by:	Approved by:
<i>徐恩松</i>	<i>黄岳东 2010.11.25</i>	<i>[Signature]</i>



深圳市福瑞祥电器有限公司恒丰分厂
SHENZHEN FEREX ELECTRICAL CO., LTD.

地址: 中国广东省深圳市宝安区西乡街道恒丰工业城 B7 栋 4-6 楼

Add: 4-6F, B7 Building, Hengfeng industrial park, Huangtian village, Xixiang town, Bao'an district, Shenzhen, Guangdong, China.

Tel: (0755) 27474030 27474044, 27474067, 27474073

Fax: (0755)27474076

E-mail: hjliu@ferex.com.cn

Website: <https://www.ferex.com.cn>

Table of contents

No.	Content	Page
0.	Revision control list	2
1.	Scope	3
2.	Input characteristics	3
3.	Output characteristics	3
4.	Energy Efficiency	3
5.	Protection characteristics	4
6.	Safety & EMC Standard	4
7.	Reliability & Quality control	4
8.	Environmental requirement	5
9.	Other requirements	5
10.	Mechanical characteristics:	5
11.	Certificate:	5
	APPENDIX A: Physical Dimensions	6
	APPENDIX B: Nameplate	7
	APPENDIX C: Packing	8
	APPENDIX D: Certificate	9-13

O. Revision control list:

Date	Description of Change	Revised by	Checked by	Approved by
2010-11-22	First release	S.G.XU	HARDY	H.J.LIU

PRED. by	S.G.XU 2010-11-22	 福瑞祥 F E R E X	SHENZHEN FEREX ELECTRICAL CO.,LTD.	
CHKD. by	Hardy 2010-11-22			
APVD. by	H.J.LIU 2010-11-22		Model: FBP045-120S350J2	Rev.:1.0

1. Scope:

This specification defines the input, output, performance characteristics, and environment, noise and safety requirements for a **42.0** watts output switching type power adapter. The adapter input/output are **100-240VAC** input and **+12.0V DC** with **3.5A** Normal output current.

2. Input characteristics:

Test item	Min.	Normal	Max.
AC input voltage	90 V	100-240 V	264 V
AC input frequency	47 Hz	50/60 Hz	63 Hz
AC input current	1.1A Max. @ 100-240Vac input		
Inrush current (cold)	No damage shall occur and the input fuse shall not blow up.		

3. Output characteristics:

Test item	Output	Test condition
Rated output voltage	+ 12.0 V	100-240 Vac input
Output voltage range	11.40V-12.60V	3.5A output current & 100-240 Vac input
Min. output current	0 A	100-240 Vac input
Normal output current	3.5A	100-240 Vac input
Ripple	200mV Max.	3.5A output current & 230 Vac input
		* measured at the end of output cables which added a 0.1uF(104)ceramic capacitor and a 47uF electrolytic capacitor(connect parallel), measured with a 20MHz bandwidth.
Turn-on Delay Time	3.0S Max.	3.5A output current & 100-240 Vac input
Rise Time	20mS Max.	3.5A output current & 100-240 Vac input
Overshoot	5% Max.	3.5A output current & 100-240 Vac input
Remark: Unless otherwise specification output load must set at CC mode.		

4. Energy Efficiency

Item	Requirement	
No-load power consumption	0.3W Max.	100-240 Vac input & No-load
Efficiency	<input checked="" type="checkbox"/> 80 % Min.	3.5A output current & 230 Vac input
	<input type="checkbox"/> 83.49% Min. For average active mode.	100% /75% / 50% / 25% load & 115Vac/60Hz or 230 Vac/50Hz input

PRED. by	S.G.XU 2010-11-22		SHENZHEN FEREX ELECTRICAL CO.,LTD.	
CHKD. by	Hardy 2010-11-22			
APVD. by	H.J.LIU 2010-11-22	Model: FBP045-120S350J2	Rev.:1.0	Page3 Of 13

5. Protection characteristics

Input fuse	<input checked="" type="checkbox"/> T3.15A 250Vac Fuse <input type="checkbox"/> 4.7R/1W Wire-wound Fuse-resistor
Short-Circuit protection	The adapter must withstand a continuous short circuit on the output without damage and Auto-recovery when short-circuit moved.
Over-Current protection	In Overload mode, The output must drop to a low voltage.
Over-Voltage protection	Single component failure must not cause output voltage over 20V , at 230 Vac input & 3.5A output current,

6. Safety & EMC Standard

The adapter designed to meet the following standards:

Safety standards	<input checked="" type="checkbox"/> (Australian/New Zealand) AS/NZS 60950.1:2003+A1+A2+A3 <input checked="" type="checkbox"/> (Australian/New Zealand) AS/NZS 60065:2003+A1 <input checked="" type="checkbox"/> (TUV-GS) EN 60065/A11:2008; <input checked="" type="checkbox"/> (TUV-GS) EN 60950-1/A11:2009; <input checked="" type="checkbox"/> (CE) LVD 2006/95/EC Directive IEC 60950-1/EN 60950-1 <input checked="" type="checkbox"/> (CE) LVD 2006/95/EC Directive IEC 60065/EN 60065
EMC Standards	<input checked="" type="checkbox"/> (Australian/New Zealand) C-Tick;AS/NZS CISPR 22:
Hi-Pot	Primary To Secondary: 3000Vac 10mA 1 minute or 4242Vdc 10mA 1 minute.
Insulation Resistance	Primary To Secondary: 10M ohm Min. at 500Vdc .
Leakage Current	0.25mA Max. at 100-240 Vac input / 50-60Hz

7. Reliability & Quality control

Item	Requirement
MTBF	>30000 Hours at 25 °C (Standard:MIL-HDBK-217F), 230 Vac input & 80% Normal output current.
Burn-In	The power supply shall withstand a minimum of 2 hours Burn-In test at 230 Vac input & Normal output current with 35-40 °C room temperatures. After test, product shall operate normally.

8. Environmental requirement

Item	Requirement
Operating Environmental	Temperature: 0°C - 40 °C Relative Humidity: 20%-85%,noncondensing Altitude: Sea level to 2,000 M.

PRED. by	S.G.XU 2010-11-22	 福瑞祥 F E R E X	SHENZHEN FEREX ELECTRICAL CO.,LTD.	
CHKD. by	Hardy 2010-11-22			
APVD. by	HJ.LIU 2010-11-22	Model: FBP045-120S350J2	Rev.:1.0	Page4 Of 13

Storage (Non-operating) Environmental	Temperature: -20°C - 60°C Relative Humidity: 5%-95%,noncondensing Altitude: Sea level to 2,000 M.
Cooling	Natural convection cooling
Vibration and Shock	(Non-operating, with packing) Reference to IEC 68-2-6 Frequency: 5-500 Hz Sweep:2hour,each axis (X, Y, Z) Acceleration: 0.6G (5~50 Hz, peak - peak), 1.5G (50~500 Hz, peak - peak) Displacement: 0.4 mm (5~50 Hz)

9. Other requirements

Item	Requirement
Hazardous substances	The components and materials shall be in compliance with <input checked="" type="checkbox"/> EU Directive 2002/95/EC "ROHS" <input checked="" type="checkbox"/> EU Directive 2002/96/ec "WEEE"

10. Mechanical characteristics:

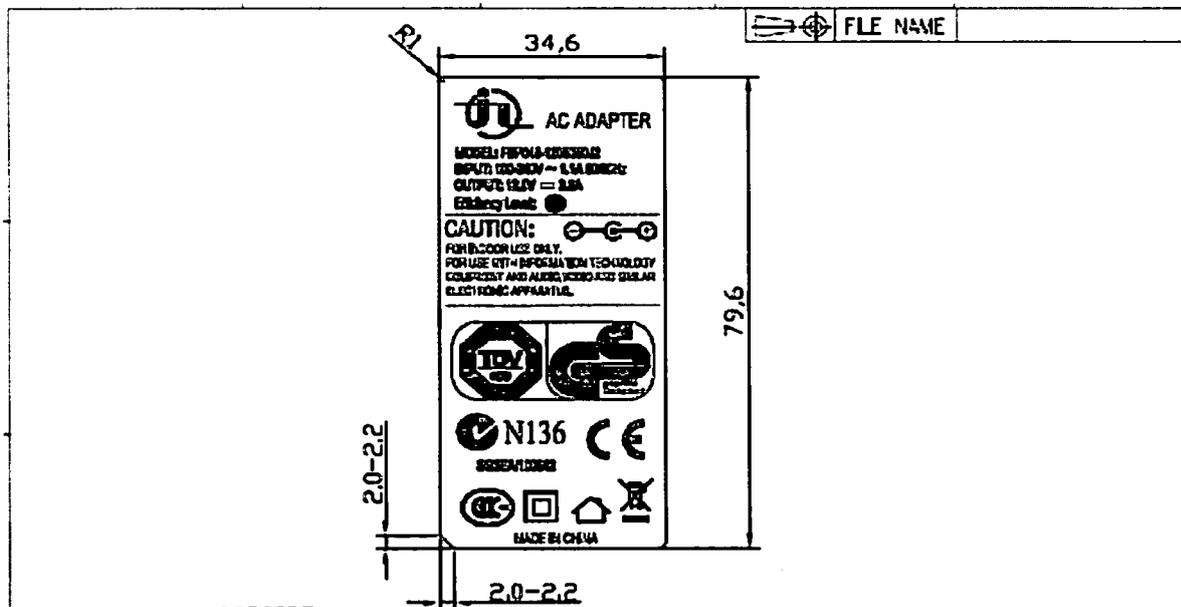
Item	Requirement
Drop test	Dropped freely from 1 m(for wall mount product) height onto the surface is consisted of hardwood 13 mm thick, mounted on two layers of plywood each 19-20 mm thick, all supported on concrete floor once from 3 different surfaces. After testing, the product should not be damaged.
Physical dimensions	The detail dimension of product see APPENDIX A.
Input plug type	<input type="checkbox"/> Desk-type, IEC320-C6, 3-Pin Small <Live, Neutral,FG> <input checked="" type="checkbox"/> Desk-type, IEC320-C8, 2-Pin Small <Live, Neutral> <input type="checkbox"/> Desk-type, IEC320-C14, 3-Pin Small <Live, Neutral,FG>
DC Output cord	Wire: <u>UL2468 20AWG/2C 1500mm Black</u> Plug: (OD) <u>5.5mm</u> *(ID) <u>2.1mm</u> *(length) <u>11.0 mm</u> Center (+) <u>180°音叉叉沟式</u>
Nameplate	The detail information of Nameplate see APPENDIX B.

11. Certificate:

Type of Certificate	<input type="checkbox"/> CCC <input checked="" type="checkbox"/> CE <input checked="" type="checkbox"/> GS <input type="checkbox"/> FCC <input type="checkbox"/> UL <input checked="" type="checkbox"/> SAA <input checked="" type="checkbox"/> C-TICK The detail Certificate of product see APPENDIX D.
---------------------	---

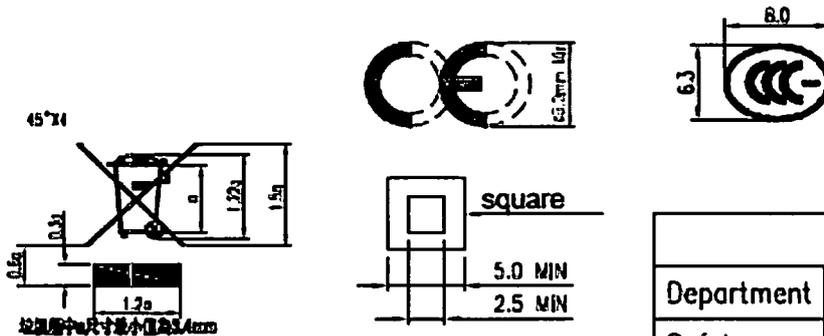
PRED. by	S.G.XU 2010-11-22	 福瑞祥 SHENZHEN FEREX ELECTRICAL CO.,LTD.		
CHKD. by	Hardy 2010-11-22			
APVD. by	H.J.LIU 2010-11-22	Model: FBP045-120S350J2	Rev.:1.0	Page5 Of 13

APPENDIX B: Nameplate



NOTES:

1. SCALE: 1/1;
2. Thickness: 0.1~0.2mm;
3. Tolerance +0/-0.2;
4. Material: 8#PP synthetic paper or better;
5. COLOR: White CHARACTERS ON BLACK;

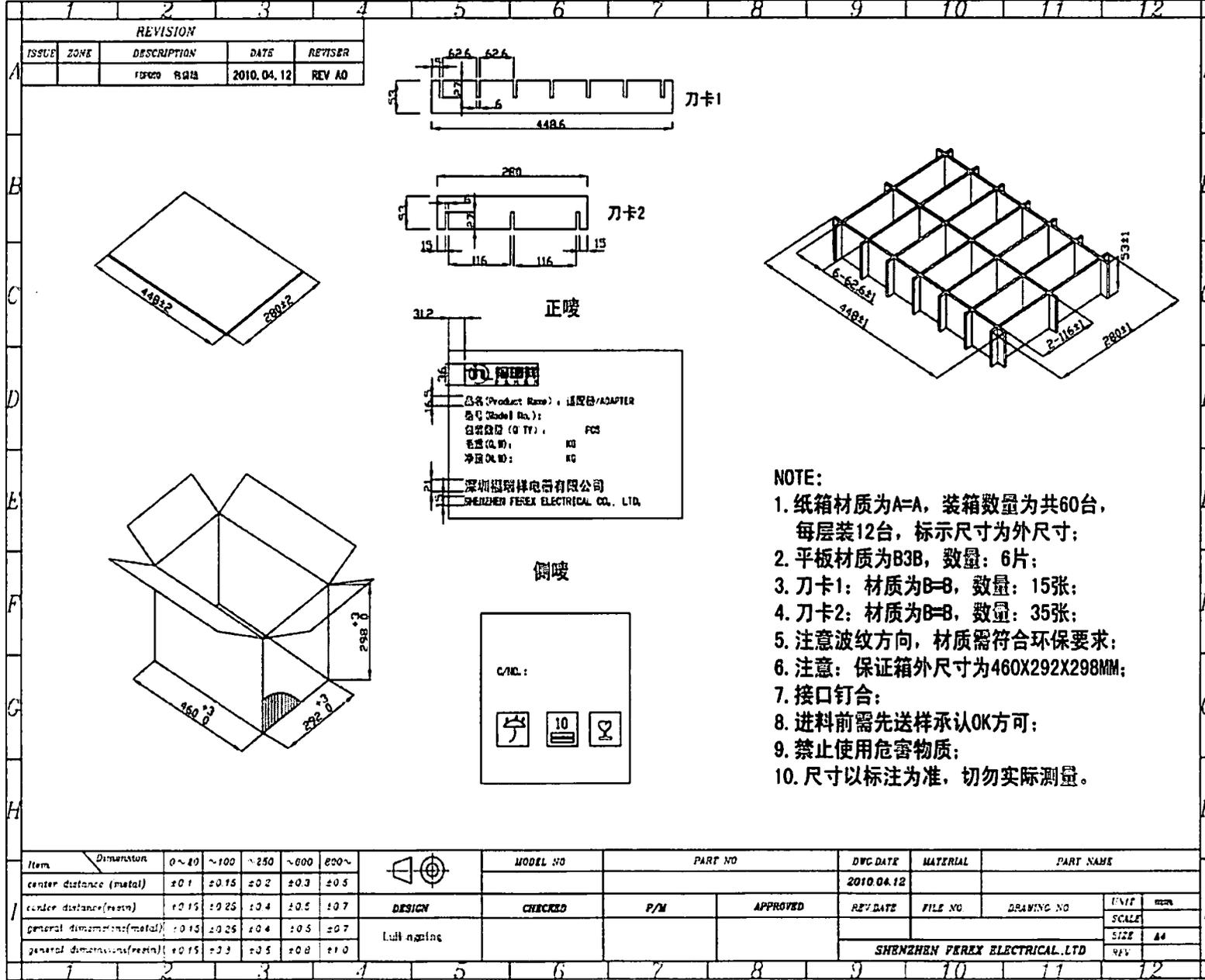


Department	Signature
Safety	
Sales	

				UNIT	TOLERANCE: X XX
				SCALE 1:1	ISSUED DATE 2010-09-15
01	2010-09-15	第一次发行		DRAWN BY Justus	CHECKED BY
REV.	DATE	DESCRIPTION	ECN NO.	DESIGNED BY Justus	APPROVE BY
		ITEM NO.		DRAWING NO.	SHEET

PRED. by	S.G.XU 2010-11-22		SHENZHEN FEREX ELECTRICAL CO.,LTD.		
CHKD. by	Hardy 2010-11-22				
APVD. by	H.J.LIU 2010-11-22	Model: FBP045-120S350J2	Rev.:1.0	Page7 Of 13	

APPENDIX C: Packing



S.G.XU 2010-11-22	Hardy 2010-11-22	H.J.LIU 2010-11-22	SHENZHEN FEREX ELECTRICAL CO.,LTD.
PREP. by	CHKD. by	APVD. by	Model: FBPO45-120S35012
			Rev.:1.0
			Page8 Of 13



Certificate No: SGS/100542

CERTIFICATE OF APPROVAL

This certificate is issued to confirm that **SGS Systems & Services Certification Pty Ltd** (Electrical Product Certification Services (EPCS) Australia) as accredited by JAS-ANZ in accordance with ISO/IEC Guide 65 has certified the equipment / appliance / accessory described hereunder to comply with the minimum safety standards for which the Application has been made by :-

SHENZHEN FEREX ELECTRICAL CO., LTD.
 Block 1, The 3rd Industrial Park
 Lisonglang Village, Gongming Town
 Gongming New District, 518106
 Shenzhen, Guangdong
 P. R. CHINA

DESCRIPTION OF ELECTRICAL EQUIPMENT

Class: Power Supply or Charger
Product: AC Adapter
 (for I.T. and Audio, video and similar electronic apparatus)
Trade Name / Manufacturer: 
Catalogue / Model No(s): FEP045-XXXSYYYJ2 series
 (where XXX=030-240 and denotes output voltage; YYY=050-400 and denotes output current)
Ratings: Input: 100-240 V a.c.; 50/60 Hz; 1.1 A; Class II
 Output: 8.0-24.0 V d.c.; 0.50-4.00 A; 32-45 W
Standard No.: AS/NZS 60950.1:2003 + A1 + A2 + A3
 AS/NZS 60085.2:2003 + A1

REQUIRED MARKING: SGSEA/100542
EXPIRY DATE: 26 August 2015
DATE OF CERTIFICATION: 27 August 2010

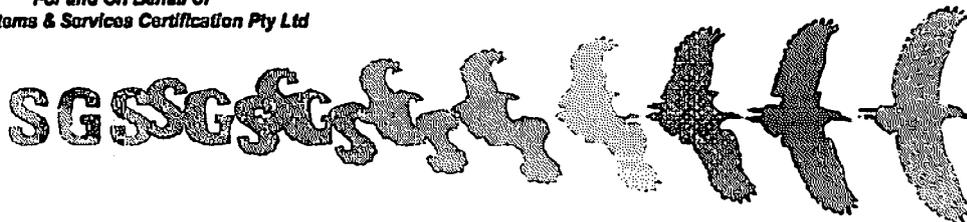
JAS-ANZ



www.jas-anz.org/register

A. N. [Signature]

For and On Behalf of
SGS Systems & Services Certification Pty Ltd



SGS EPCS Australia, 460 Princes Highway, NOBLE PARK, VIC 3174, AUSTRALIA

© SGS, 2010. All rights reserved. Reproduction in whole or in part is prohibited without the prior written consent of SGS.

PRED. by	S.G.XU 2010-11-22		SHENZHEN FEREX ELECTRICAL CO.,LTD.	
CHKD. by	Hardy 2010-11-22			
APVD. by	HJ.LIU 2010-11-22	Model: FBP045-120S350J2	Rev.:1.0	Page9 Of 13



Ref. Certif. No.

SG-TN-01106

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE CC

**CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC**

Product Produit	Adaptors (AC Adapter)
Name and address of the applicant Nom et adresse du demandeur	Shenzhen Ferex Electrical Co., Ltd. Block 1, The 3rd Industrial Park, Lisonglang Village, Gongming Town, Guangming New District 518106 Shenzhen, Guangdong, PEOPLE'S REPUBLIC OF CHINA
Name and address of the manufacturer Nom et adresse du fabricant	Shenzhen Ferex Electrical Co., Ltd., Block 1, The 3rd Industrial Park, Lisonglang Village, Gongming Town, Guangming New District, 518106 Shenzhen, Guangdong, PEOPLE'S REPUBLIC OF CHINA
Name and address of the factory Nom et adresse de l'usine	Shenzhen Ferex Electrical Co., Ltd., Block 1, The 3rd Industrial Park, Lisonglang Village, Gongming Town, Guangming New District, 518106 Shenzhen, Guangdong, PEOPLE'S REPUBLIC OF CHINA
Rating and principal characteristics Valeurs nominales et caractéristiques principales	Rated Input : 100-240VAC, 50/60Hz, 1.1A Rated DC Output : see test report for details Protection Class : II Degree of Protection against Ingress of Dust and Liquid : IP20 see logo in test report
Trade mark (if any) Marque de fabrique (si elle existe)	
Model/type Ref. Ref. de type	FBP045-XXSYYYJ2 series (see test report for details of model description)
Additional information (if necessary) Information complémentaire (si nécessaire)	See Test Report for National Differences and Group Differences
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60065/A1:2005
as shown in the Test Report Ref. No. which form part of this certificate comme indiqué dans le Rapport d'essais numéro de référence qui constitue une partie de ce certificat	TÜV SÜD PSB Pte Ltd 211-300250-000

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification

Date, 2010-04-26
CBS 10 04 70531 019


(Jimmy Huang)



TÜV SÜD PSB Pte Ltd · 1 Science Park Drive · Singapore 118221

PSB Singapore

PRED. by	S.G.XU 2010-11-22	 福瑞祥 SHENZHEN FEREX ELECTRICAL CO.,LTD.	Model: FBP045-120S350J2	Rev.:1.0	Page 10 Of 13
CHKD. by	Hardy 2010-11-22				
APVD. by	HJ.LIU 2010-11-22				

ZERTIFIKAT ◆ CERTIFICATE ◆ 證書 ◆ CERTIFICADO ◆ CERTIFICAT

AT: 07-20



Product Service

CERTIFICATE

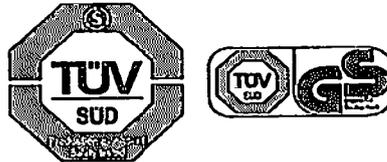
No. Z1A 10 04 70531 016

Holder of Certificate: Shenzhen Ferex Electrical Co., Ltd.

Block 1, The 3rd Industrial Park
Lisonglang Village, Gongming Town
Guangming New District
518108 Shenzhen, Guangdong
PEOPLE'S REPUBLIC OF CHINA

Factory(ies): 70531

Certification Mark:



Product: Adaptors
(AC Adapter)

Model(s): FBP045-XXXSYYYJ2
(XXX = 080-240, stands for output voltage
from 8.0VDC to 24.0VDC, YYY = 050-400,
stands for output current from 0.50A to 4.00A)

Parameters:

Rated Input :	100-240VAC, 50/60Hz, 1.1A
Rated DC Output :	see page 2 for details
Protection Class :	II
Degree of Protection against Ingress of Dust and Liquid :	IP20
Remark:	Maximum operating temperature is 40°C.

Tested according to: EN 60085/A11: 2008
EN 60950-1/A11:2009
PPP 76001:2008 incl. ZEK 01.2-08

The product meets the safety and health requirements of the German Equipment and Product Safety Act section 7 subsection 1 sentence 2 GPSG. The certification marks shown above can be affixed on the product. It is not permitted to alter the certification marks in any way. In addition the certificate holder must not transfer the certificate to third parties. This certificate is valid until the listed date, unless it is cancelled earlier. See also notes overleaf.

Test report no.: 68210934801

Valid until: 2012-04-25

Date, 2010-04-28 (Alex Kong)



Page 1 of 2

TÜV SÜD Product Service GmbH · Zertifizierstelle · Ridlerstraße 65 · 80339 München · Germany

TUV®

PRED. by	S.G.XU 2010-11-22	福瑞祥 F E R E X	SHENZHEN FEREX ELECTRICAL CO.,LTD.	
CHKD. by	Hardy 2010-11-22			
APVD. by	HJ.LIU 2010-11-22	Model: FBP045-120S350J2	Rev.:1.0	Page11 Of 13

Supplier's declaration of conformity

For compliance levels 1, 2 and 3 in Australia



As required by notices under:

- section 182 of the Australian Radiocommunications Act 1992.

Instructions for completion

- This completed form remains with the supplier as part of the documentation required for the compliance records. Do not return this form to the ACMA.

Supplier's details

Qualsure Consultants

(AGENT)

ACMA supplier code number **N136**

at 18 Hood Street Rosedale Vic.

Product details

Product description – brand name, type, model, lot, batch or serial number (if available)

Brand Name	
Model Number	FBP045-XXSYYYJ2 (XXX three digits denote range of output voltage, 080-240 denote 8.0V-24.0V; YYY three digits denote range of output current, 050-400 denote 0.50A-4.00A)
Description	AC ADAPTER

Compliance with Radiocommunications (Electromagnetic Compatibility) Standard 2008

The above mentioned product complies with the requirements of the Radiocommunications (Electromagnetic Compatibility) Standard 2008. Evidence of compliance is demonstrated by test reports to the following applicable standards.

Applicable standards

Standard title, number and, if applicable, number of the test report

Standard	Test Report Number
AS/NZS CISPR 22:2009	SEAZ1008134-1

Declaration

I hereby declare that the product mentioned above complies with the requirements of the Radiocommunications (Electromagnetic Compatibility) Standard 2008. All products supplied under this declaration will be identical to the product identified above.

Gordon Slimmon
Director

30 Aug 10

QUALSURE CONSULTANTS
A division of Biulen Pty Ltd (ACN 090 692 354) Registered Office 18 Hood Street Rosedale Vic. 3847
CF3157/1-1

07/30/10

PRED. by	S.G.XU 2010-11-22	福瑞祥 SHENZHEN FEREX ELECTRICAL CO.,LTD.	Model: FBP045-120S350J2	Rev.:1.0	Page12 Of 13
CHKD. by	Hardy 2010-11-22				
APVD. by	H.J.LIU 2010-11-22				

Supplier's declaration of conformity

For compliance levels 1, 2 and 3 in Australia

As required by notices under:

- section 182 of the Australian *Radiocommunications Act 1992*.



Instructions for completion

- This completed form remains with the supplier as part of the documentation required for the compliance records. Do not return this form to the ACMA.

Supplier's details

Qualsure Consultants

(AGENT)

ACMA supplier code number **N136**

of 18 Hood Street Rosedale Vic.

Product details

Product description – brand name, type, model, lot, batch or serial number (if available)

Brand Name	
Model Number	FBP045-XXXSYYYJ2 (XXX three digits denote range of output voltage, 080-240 denote 8.0V-24.0V; YYY three digits denote range of output current, 050-400 denote 0.50A-4.00A)
Description	AC ADAPTER

Compliance with Radiocommunications (Electromagnetic Compatibility) Standard 2008

The above mentioned product complies with the requirements of the *Radiocommunications (Electromagnetic Compatibility) Standard 2008*. Evidence of compliance is demonstrated by test reports to the following applicable standards.

Applicable standards

Standard title, number and, if applicable, number of the test report

Standard	Test Report Number
AS/NZS CISPR 13:2004	TPFV1008134-2

Declaration

I hereby declare that the product mentioned above complies with the requirements of the *Radiocommunications (Electromagnetic Compatibility) Standard 2008*. All products supplied under this declaration will be identical to the product identified above.

Gordon Slimmon
Director

30 Aug 10

QUALSURE CONSULTANTS
A division of Blulen Pty Ltd (ACN 090 692 354) Registered Office 18 Hood Street Rosedale Vic. 3847
CF3158/1-1



PRED. by	S.G.XU 2010-11-22	福瑞祥 F E R E X SHENZHEN FEREX ELECTRICAL CO.,LTD.	Model: FBP045-120S350J2	Rev.:1.0	Page13 Of 13
CHKD. by	Hardy 2010-11-22				
APVD. by	H.J.LIU 2010-11-22				