



a seacomp company

SPECIFICATION FOR APPROVAL

MODEL NUMBER	
PART NUMBER	HDP-ALL-0004
DESCRIPTION	International adapters (AU, EU, UK, WHITE)
CUSTOMER / PROJECT CODE	
REVISION	A0
DATE	July 6, 2018

CUSTOMER APPROVAL	DATE
SEACOMP ENGINEERING APPROVAL	DATE

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PART NUMBER	HDP-ALL-0004	REVISION	A0
DESCRIPTION	International adapters (AU, EU, UK, WHITE)	DATE	Jul 6, 2018

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DESCRIPTION	International adapters (AU, EU, UK, WHITE)	DATE	Jul 6, 2018

Revision History

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PART NUMBER	HDP-ALL-0004	REVISION	A0
DESCRIPTION	International adapters (AU, EU, UK, WHITE)	DATE	Jul 6, 2018

1 Scope

This specification is for international adapters IEC Type-C, Type-G and Type-I to allow connectivity to worldwide AC receptacles.

Type-C: Europe except UK

Type-G: UK, Ireland, Malaysia, Singapore and Hong Kong

Type-I: Australia, New Zealand and Argentina

These Plugs allow connectivity into many other countries. Listing all is beyond the scope of this specification. Full list of these countries can be found in IEC website. "<http://www.iec.ch/worldplugs/>"

2 Quality Requirements

2.1 Product Specific Quality Requirements

2.1.1 Mechanical / Electrical Requirements

2.1.1.1 Paint and Print Test

In accordance with EN 60068-2-70

The printings have to withstand the testing procedures without any restrictions.

Test liquid	Mineral oils (example: Baby oil)
Wiping cycles	1,000
Contact pressure	1N ±0.2N

2.1.1.2 Mechanical and Electrical Reliability

All electrical contacts and mechanically moving parts have to withstand a stress test of at least 3,000 simulated connecting cycles without any damage. After the test, the device must have 100% functionality. Connectors must comply with the manufacturer's requirements or relevant standards at minimum.

2.1.1.3 Drop Test

This test requires the device to be dropped from a height of 1 meter onto a concrete floor. The drop should cover all surfaces including the 2 edges and all 4 corners. After the test, the device should have 100% functionality. There should not be any cracks, breaks or damage to any surface or have any loose internal components. Additionally, the ultrasonic weld joint should still be intact with minimum 80% coverage.

2.1.1.4 Enclosure Crush Test

This test applies a uniform distributed weight of 250 Newtons on all surfaces for 5 seconds per surface. There should be no physical damage or effect on the products performance (i.e. operating folding AC blade, easy insertion of international adapters, snug USB connector fit).

2.1.2 Climate Requirements

2.1.2.1 Temperature Range

Full Functionality	0°C up to +50°C for AC/DC, -10°C up to +65°C for DC/DC
Storage Temperature	-20°C up to +85°C

2.1.2.2 Thermal Shock (operational)

Low Temperature	-10°C (DC/DC), 0°C (AC/DC)
High Temperature	+65°C (DC/DC), 50°C (AC/DC)
T / t	15°C/min
Cycle Duration	1 hour
Number of Cycles	10

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Mode of Operation Requirement Minimum 75% full load
 100% functionality after test, without any damages or physical change

2.1.2.3 Thermal Shock (non-operating)

Low Temperature	-20°C
High Temperature	+85°C
T / t	15°C/min
Cycle Duration	1 hour
Number of Cycles	10
Mode of Operation Requirement	Switched off 100% functionality after test, without any damages or physical change

2.1.2.4 Thermal Aging

Temperature	-20°C and +85°C
Duration	96 hours at each temperature
Mode of Operation Requirement	Power off 100% functionality after test, without any damages or physical change

2.1.2.5 Humidity (non-condensing)

Temperature	+45°C
Humidity	95%
Duration	96 hours
Mode of Operation Requirement	Power up no load 100% functionality after test, without any damages or physical change

2.1.2.6 Humidity (condensing)

Upper Temperature	+45°C
Lower Temperature	+25°C
Humidity	95%
Test Cycle	5°C / max ramp rate
Duration	96 hours
Number of cycles	6
Mode of Operation Requirement	Power up no load 100% functionality after test, without any damages or physical change

2.1.2.7 Salt Spray

Follow ASTM B117 standard with the possible exceptions listed below.

Temperature	35°C + 1.1 / - 1.7°C
Salt Solution	5%+-1 Salt solution (NaCl) in Distilled or D1193 Type IV water
PH	6.5 - 7.2
Fog Rate	1m - 2 mL / hr / 80sq.cm
Duration	24 hours

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2.2 General Quality Requirements

2.2.1 Product Related Requirements

2.2.1.1 General Appearance

Follows cosmetic requirements listed in Section 4 of this specification.

2.2.1.2 Emissions

The device must not produce any nuisance or unhealthy smell. A certificate must be made available proving the use of harmless materials.

2.2.1.3 Product Safety

The product has to comply with the relevant requirements listed in IEC 60950 (ITE) and IEC 60601 (medical) whenever applicable.

Normal usage of the product must not result in any danger. In particular, any broken component parts, including electric components, may not result in any risk or danger of injury to the user. This is to be proven by a risk analysis during the product's development phase. Any potential hazard has to be indicated clearly in the user manual.

During normal use at an ambient temperature of 25°C, the housing (made of synthetic material) may warm up by 50K. Therefore, the maximum temperature of the parts could be as high as 75°C.

Individual "Hot Spots" (maximum size of 2 cm²) is acceptable if they are not located in the grip area. A warm up by 60K is acceptable in these "Hot Spots." Therefore, the maximum temperature of these parts could be 85°C.

For both normal use and "Hot Spot" instances, the housing must not exceed the maximum temperature of the applied synthetic.

Protective actions against confusing the poles of the electric connectors have to be taken for any internal parts or connectors with specific polarity.

Transportation, storage, and operation of the adapter must not create any hazard, personal injury or any material damage. This is guaranteed through the controllable quality of workmanship and material used.

It must be guaranteed that after contact with natural oils, the housing material's performance does not result in any dangerous situations to the customer.

2.2.1.4 Recycling and Environmental Compatibility

Must comply with RoHS and REACH.

Quality Level, (AQL)

In accordance with DIN ISO 2859 Part 1

General test-level	II
Critical defects	AQL 0
Major defects	AQL 0.4
Minor defects	AQL 0.65

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2.2.2 Supplier Related Requirements

2.2.2.1 Demonstration of Quality

The supplier is obliged to maintain a quality assurance system which covers R&D and production specific items. This system must meet the requirements of ISO 9000-2008. A quality assurance plan (QA plan) is required for a project-specific proof of quality-assuring measures. The plan should be made available and presented upon request.

For the development phase, the QA plan needs to define milestones as proof of the reliability prognoses. The development results and the release by the customer need to also be included in this plan.

For the production phase, the QA plan has to focus on the detailed verification of all the planned QA steps from component procurement to delivery. Any acceptance or error criteria to be applied to the QA plan must meet the process capability index as defined in this specification.

2.2.2.2 Process Assurance

The quality capability has to be proven by a process capability of $Cpk > 1.33$ and must be documented by a continuous monitoring of the production process. Parameters relevant for this process capability will be marked separately in the product's construction documents.

2.2.2.3 Reliability

The probability of failure and the return of devices for repair must be less than 1% per year.

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3 Cosmetic

3.1 Surface Definitions

Level A is the primary surface. For example, the front face of the adapter.

Level B is a secondary surface that may be viewed periodically by the end user, but is not in direct view during normal use. For example, the Cable (AC and DC), the sides of the housing, and the back of the housing.

Level C surfaces are not visible by the end user. For example: inaccessible inside surfaces of the product.

3.2 Inspection Conditions

4.2.1 Inspection Method: Light source: Cool white fluorescent lamp 750 – 1000Lux

4.2.2 Viewing Distance: 30cm

4.2.3 Viewing Angle: 0 – 90 Degrees

4.2.4 Part Rotation Angle During Inspection:

Vertical Rotation Angle 180 Degrees

Horizontal Rotation Angle 360 Degrees

4.2.5 Viewing Time:

10 seconds total for all surfaces

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3.3 Cosmetic Defect Definitions

Defect	Level A	Level B	Level C
Scratches, Dents, and Burrs (see Note 1)	Single defect not exceeding total surface area 5.50 mm ²	Two defects not exceeding total surface area 11 mm ²	Accept if it does not affect fit or function
Hairline Scratches, Gate Blush/Trim, Stress	Use 25% Contrast Standard to accept or reject for visible hairline scratches with depth of < 0.1 mm (total surface area not to exceed limits set in surface scratch below)		
Surface Scratches, Scuffs (see Note 1)	Single defect not exceeding total surface area of 5.7 mm ²	Two defects not exceeding total surface area 25 mm ²	Accept if it does not affect fit or function
Chips, Nicks, Cracks or Broken Features	Not Allowed		
Flash, Burrs, Sink Marks (see Note 2)	Not Allowed	Less than 0.5mm	Accept if it does not affect fit or function
Discoloration	Follow color samples		
Parting Lines	See diagram		
General Stains (not permanent)	Not allowed		
Rust	Not allowed		
Printing	No missing text or mistakes allowed. All letters should be visible. Refer to approved sample.		

Note 1:

Area called out in these fields are calculated based on limit samples. The values are calculated based on average area covered by the features.

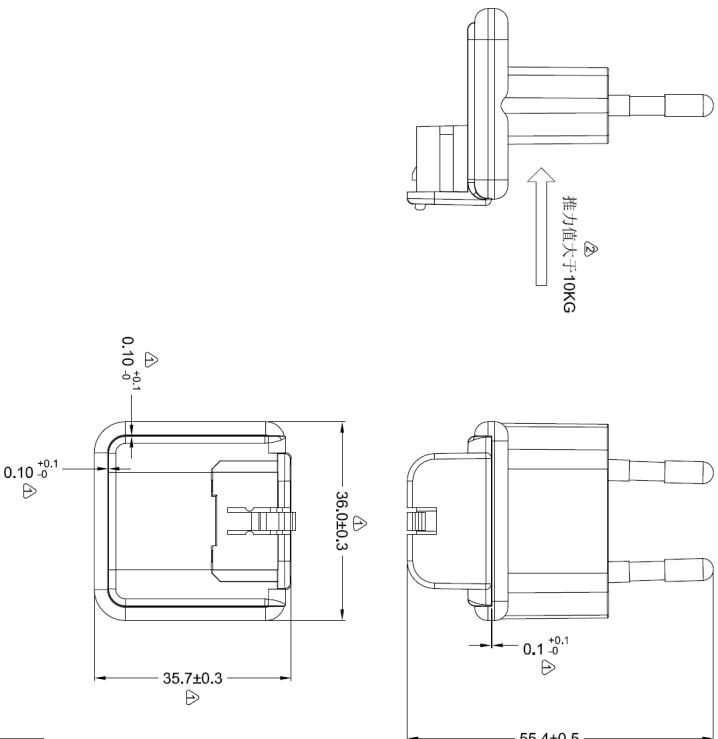
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Parting Line: IMAGE IS FOR REFRENCE (IEC Type -I)

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(IEC Type -C)

Translation(注记):
1. Production for all components shall not be started before confirmation by HDP engineer.
(所有零部件都需经迈拓工程师确认后才可生产.)
2. Dimensions marked as ① are HDP control dimensions and
must comply to Cpm≥1.33 (to be inspected by IQC).
(有①标记的尺寸为重要管制尺寸, 其Cpm必须≥1.33 (IQC必检))
3. Dimensions marked as ■ are customer control dimensions (to be inspected by IQC).
(有■标记的尺寸为客户重要管制 (IQC必检) 尺寸.)
4. Dimensions unmarked please refer to 3D CAD (未标示的尺寸请参照3D CAD).
5. Material should comply with ROHS standard (※品材质应符合ROHS).
6. Maximum draft angle is 1° unless otherwise notified (拔模角度最大为1°, 除另行通知外).
7. Diameters unmarked in drawing are 0.2mm (图中未标注的半径应为0.2mm).
8. Material (材质): PC/45 + Cu
9. Surface Treatment (表面处理): 见差异表



Technical drawing showing dimensions and force application points. The drawing includes two views: a front view and a side view. Key dimensions are: height 36.0±0.3, width 35.7±0.3, and depth 55.4±0.5. Force application points are indicated with arrows labeled "推力值大于10KG" (Push force value greater than 10KG).

差异表	
序号	料号
1	860-00018
2	860-00034

表面处理	
Copper, Plastic为黑色素材, 表面喷纹, 纹纹型号: VD127, 外观表面不能有杂色, Copper, Plastic为白色素材, 表面喷纹, 纹纹型号: VD127, 外观表面不能有杂色	
序号	料号
1	860-00018
2	860-00034
Third Angle Projection	
Quotation	Version NO.: Version K2
Draw By	Sample Checked By: 11
Tooling	Quoted By: 11
Official Issue	Date: 2016.01.29
This drawing is the property of HDP company. It contains material that is confidential and not to be reproduced for the sole use of the intended recipient. Any removal of the drawing or any part thereof by anyone other than the intended recipient is illegal and subject to criminal prosecution and civil suit for damages.	
Dimensions in mm, Tolerance in mm, Material: PC/45 + Cu, Drawing No.: 860-00018, Date: 2016.01.29, Drawn By: 11, Checked By: 11, Approved By: 11, Quoted By: 11, Tooling: 11, Official Issue: 2016.01.29, HDP Model NO.: 860-00018, Part Name: EU adapters.	
Tolerance	
Cus. Model NO. HDP	
Angular	±0.25°
Dimension F	G H J
0-8	±0.05 ±0.1 ±0.1 ±0.2
8-25	±0.05 ±0.15 ±0.15 ±0.3
25-80	±0.12 ±0.2 ±0.25 ±0.4
80-250	±0.25 ±0.3 ±0.4 ±0.6
250-800	±0.6 ±0.8 ±1.0
800-2500	±1.0 ±1.5 ±1.7
2500-	±2.0 ±3.0 ±3.0

REV.	DESCRIPTION	BY	DATE	ECN NO.
①	初版发行	肖志斌	2016.01.21	
②	修改公差	肖志斌	2016.01.26	
③	增加注释	肖志斌	2016.01.29	

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3.4 Size / Weight IEC Type -I

差异表		REV.	
序号	料号	DESCRIPTION	BY
1	860-00020	Initial Release 肖志斌 2016.01.21	
2	860-00036	Revision A 肖志斌 2016.01.26	
		增加注释 肖志斌 2016.01.29	
		增加YWW 肖志斌 2017.04.20	
		ECN-88	

Translation(注記):
1. production for **all** components shall not be started before confirmation by HDP engineer.
(所有零部件都需经迈瑞工程师确认后才可生产。)

2. Dimensions marked as ① are HDP control dimensions and must comply to CIPM2-1.3.30 to be inspected by IQC.
(有①标记的尺寸为重要管制尺寸,其CIPM必需≥1.33 (IQC必检))

3. Dimensions marked as ■ are customer control dimensions (to be inspected by IQC).
(有■标记的尺寸为客户提供重要管制 (IQC必检) 尺寸)

4. Dimensions unmarked please refer to 3D CAD (未标示的尺寸请参照3D CAD)。

5. Material should comply with ROHS standard(***品材质应符合ROHS)。

6. Material (材质) : PC+GF + Cu

7. Surface treatment (表面处理) : 见差异表

文字高度约为: 2.5MM

推力值大于10KG

Third Angle Projection

This drawing is the property of HDP Corporation. It is to be used only for the purpose of manufacturing the parts specified. Any reproduction, duplication or distribution to others is strictly prohibited and will be subject to legal action.

Model NO./Project Name: Adapters

序号	料号	表面处理
1	860-00020	Cu镀镍, 塑胶为黑色素材, 表面磨纹, 喷纹型号: VD127, 外观表面不能有杂质.
2	860-00036	Cu镀镍, 塑胶为白色素材, 表面磨纹, 喷纹型号: VD127 , 外观表面不能有杂质.

Quotation
Version NO.: A3
Drawn By
Sample
Testing
Official Issue

序号	料号	表面处理
1	860-00020	Cu镀镍, 塑胶为黑色素材, 表面磨纹, 喷纹型号: VD127, 外观表面不能有杂质.
2	860-00036	Cu镀镍, 塑胶为白色素材, 表面磨纹, 喷纹型号: VD127 , 外观表面不能有杂质.

Model NO./Project Name: Adapters

Dimensions in mm
Tolerances
Angular $\pm 0.25^\circ$

Dimension	F	G	H	J
B-25	± 0.05	± 0.1	± 0.2	
C-25	± 0.05	± 0.15	± 0.3	
D-25	± 0.05	± 0.15	± 0.2	
E-25	± 0.05	± 0.15	± 0.2	
F-25	± 0.05	± 0.15	± 0.2	
G-25	± 0.05	± 0.15	± 0.2	
H-25	± 0.05	± 0.15	± 0.2	
I-25	± 0.05	± 0.15	± 0.2	
J-25	± 0.05	± 0.15	± 0.2	

Dimensions in mm
Tolerances
Angular $\pm 0.25^\circ$

Dimension	F	G	H	J
B-25	± 0.05	± 0.1	± 0.2	
C-25	± 0.05	± 0.15	± 0.3	
D-25	± 0.05	± 0.15	± 0.2	
E-25	± 0.05	± 0.15	± 0.2	
F-25	± 0.05	± 0.15	± 0.2	
G-25	± 0.05	± 0.15	± 0.2	
H-25	± 0.05	± 0.15	± 0.2	
I-25	± 0.05	± 0.15	± 0.2	
J-25	± 0.05	± 0.15	± 0.2	

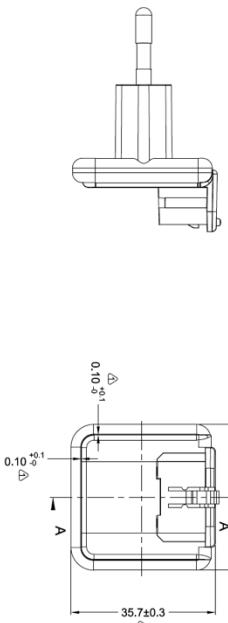
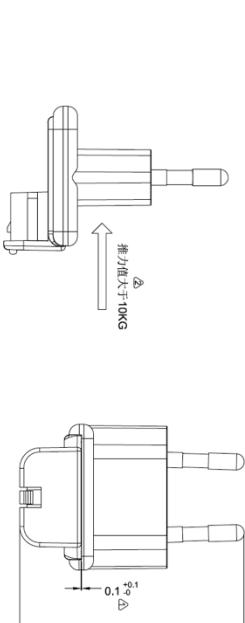
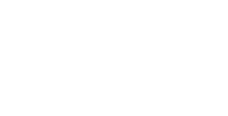
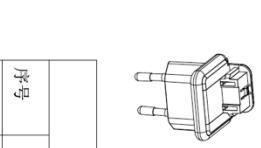
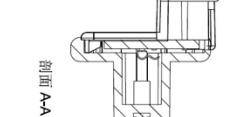
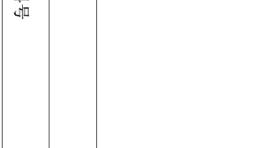
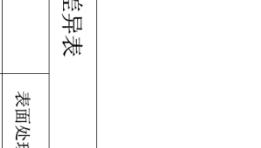
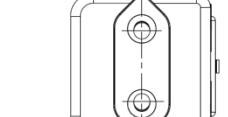
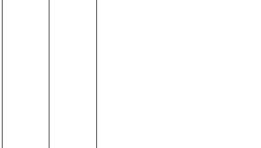
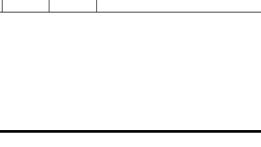
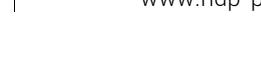
Dimensions in mm
Tolerances
Angular $\pm 0.25^\circ$

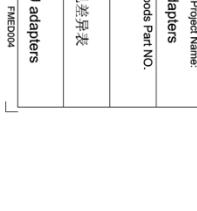
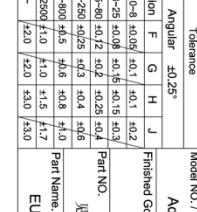
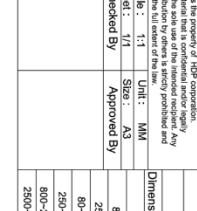
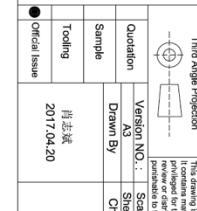
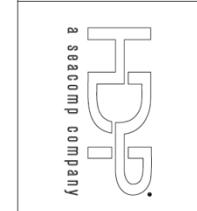
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B-25	± 0.05	± 0.1	± 0.2	
C-25	± 0.05	± 0.15	± 0.3	
D-25	± 0.05	± 0.15	± 0.2	
E-25	± 0.05	± 0.15	± 0.2	
F-25	± 0.05	± 0.15	± 0.2	
G-25	± 0.05	± 0.15	± 0.2	
H-25	± 0.05	± 0.15	± 0.2	
I-25	± 0.05	± 0.15	± 0.2	
J-25	± 0.05	± 0.15	± 0.2	

FINED004

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IEC Type -C

<p>Translation(注记): 1, production for all components shall not be started before confirmation by HDP engineer. (所有零部件都需经迈普工程师确认后才可生产.) 2, Dimensions marked as ① are HDP control dimensions and must comply to Cpm-1.3/3 to be inspected by (QC). (有①标记的尺寸为重要管制尺寸, 其Com必须≥ 1.33 (QC必检)) 3, Dimensions marked as ■ are customer control dimensions (to be inspected by (QC). (有■标记的尺寸为客户提供管制 (QC必检) 尺寸.) 4, Dimensions unmarked please refer to 3D CAD (未标注的尺寸请参照3D CAD). 5, Material should comply with ROHS standard (产品材质应符合ROHS). 6, Material (材质): PVC45 + Cu 7, Surface Treatment (表面处理): 见差异表</p>			
			
			
			
			
			
			
			

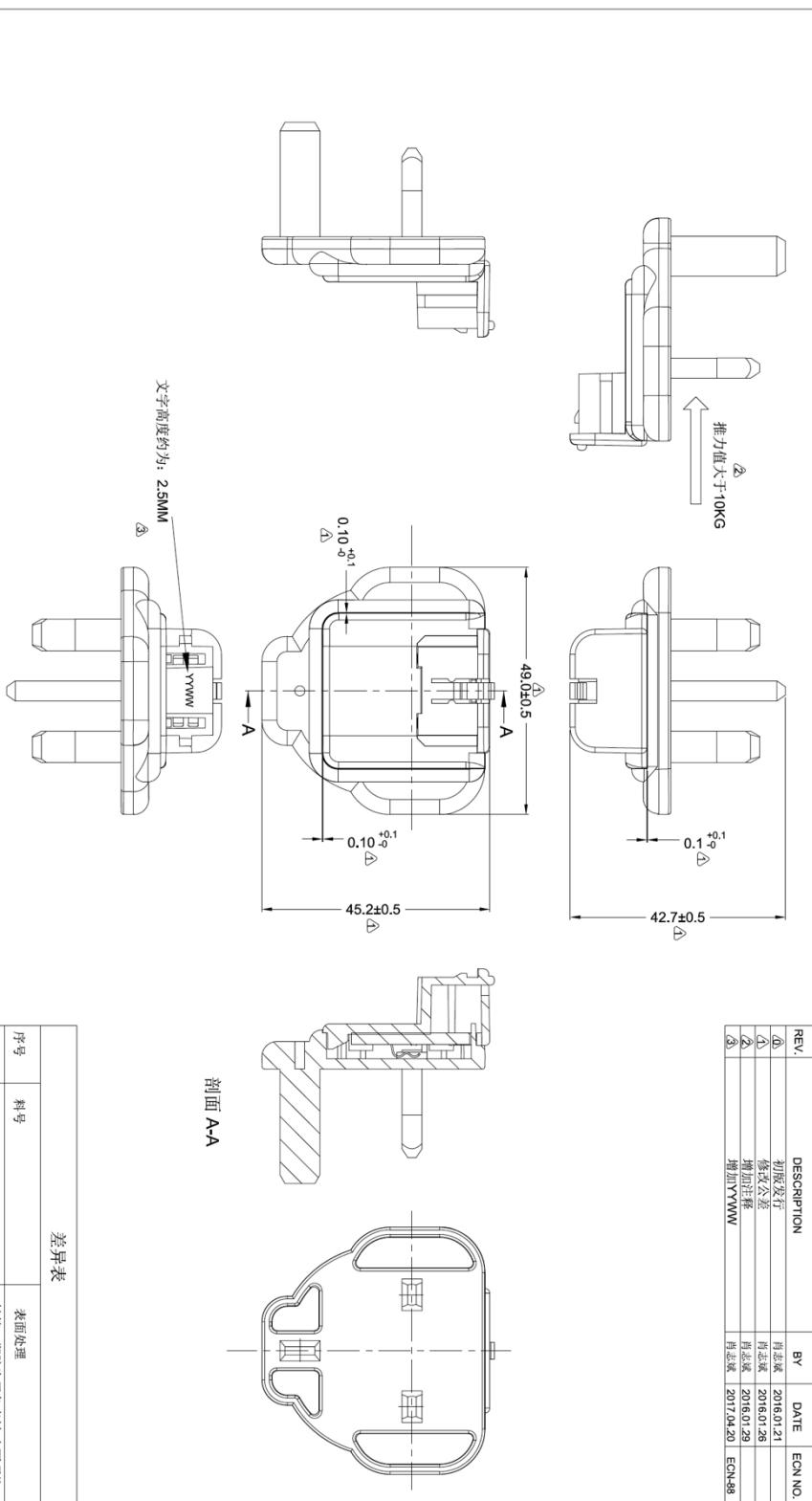

差异表
差异表

IEC Type -G

Translation(注记): A coordination for all communication shall not be deleted before communication by HDP connection.

(所有零部件都需经端部工程师确认后才可生产。)
2.Dimensions marked as **●** are HDP control dimensions and
must comply to Com² :1.31 to be inspected by IQC.
有①[●]标记的尺寸为重要管制尺寸，其必须 ≥ 1.33 (IQC必检)
3.Dimensions marked as **■** are customer control dimensions (to be inspected by IQC).

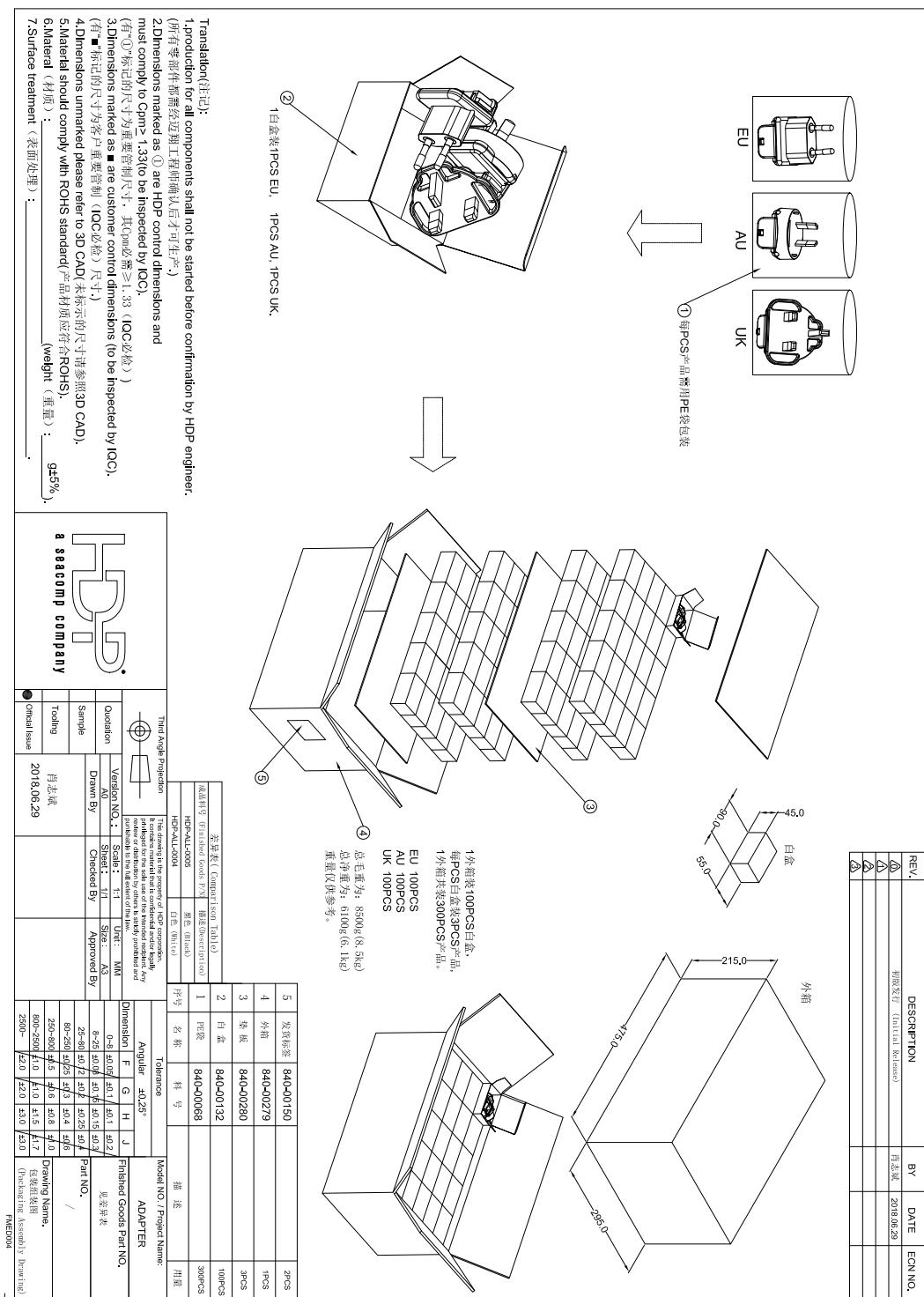
5. Material should comply with ROHS standard (μm)
6. Material (材质) : PC945 + Cu
7. Surface treatment (表面处理) : 见差异表



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DESCRIPTION	International adapters (AU, EU, UK, WHITE)	DATE	Jul 6, 2018

4 Packaging

4.1 Drawing (Adapter Packaging)



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4.2 Packaging Test

1	Bulk product	<p>Drop package on each side for a total of 10 drops (2 opposite corners, 3 adjacent sides of bottom corner, then all 6 faces) per system on concrete floor from a height of 1.0 meter. This is an operational test.</p> <p>Pass/Fail Criteria:</p> <ol style="list-style-type: none"> 1. The systems shall pass Functional Test. 2. No visible damage to product and gift box.
2	Drop test for Packaged Product (gift box, clamshell, etc.)	<p>Drop fully packaged products (in gift box or clamshell) onto a concrete floor from height of 153cm for 10 drops on the six surfaces and four corners.</p> <p>Pass/Fail Criteria:</p> <ol style="list-style-type: none"> 1. The systems shall pass Functional Test. 2. Paper or PET deformation is acceptable. No damage in product integrity of packaging materials (e.g. sealed edge openings) is allowed.
3	Sinusoidal Vibration	<p>Test with sine wave that will sweep the frequency from 7 - 500 hertz for construction test; 5 - 70 hertz for packaging test. Displacement >3.15mm. Total test duration time shall be 30 min (10 min per axis). Test shall be performed in three mutually perpendicular axes: Z-axis (vertical), Y-axis (fore-aft), and X-axis (lateral).</p> <p>Pass/Fail Criteria:</p> <p>The UUT and packaging shall withstand the above test procedure without visible damage or performance decline during operation.</p>

5 Warranty

One year warranty for defects arising from workmanship and materials per the SEACOMP Warranty, RMA, and Failure Analysis Policy.

Данный компонент на территории Российской Федерации**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибуторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ Р В 0015-002 и ЭС РД 009

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