Adapter Technology Co., Ltd.

Specification for Approval

Customer	:	**Energy Access**
Part Name	:	**Medical Power Supply**
Description	:	**36 Volts / 1.81 Amps**
Model No.	:	**ATM065T-P360 (Level VI)**
Customer P / N	:	**MS1836**
Product P / N	:	**ATM065TP360415202**
Issued Date	:	**25-Dec.-2020**
Version	:	**A1**
Issued Stamp	:	

Customer's Approval Signature

ADAPTER TECHNOLOGY CO.,LTD.
Office (Taiwan)：6F-9,No.258, Liancheng Rd.,Zhonghe District,New Taipei City 235,Taiwan (R.O.C.)
TEL：+886-2-8226-2279 FAX：+886-2-8226-2238
E-mail : service_tw@ adaptertech.com.tw；service@ adaptertech.com.tw
Factory (China)：BOAYANG ELECTRONICS CO., LTD.
Di Feng Gong Ye Qu 2 Hao,Xiasha Liuwu Village, Shipai Town, Dong Guan City, Guang Dong Province,China
TEL：86-0769-8136-9899；86-0769-8905-5998；86-0769-8136-9008
FAX：86–0769-8136-9009

65 W
Medical Power Supply
SPECIFICATION

Model No.	:	**ATM065T-P360 (Level VI)**
Description	:	**36Volts / 1.81Amps**
Part No.	:	**ATM065TP360415202**
Version	:	**A1**
Date	:	**25-Dec.-2020**

Approved	Reviewed	Checked	Prepared	Sales
	阿達特 2020.12.25 徐東昇	阿達特 2020.12.25 賴廣梅	阿達特 2020.12.25 賴廣梅	

■ Approval Documents/Spec. Revised Records

- ■ Customer : Energy Access
- ■ Model No. : ATM065T-P360
- ■ Original Documents Content : Spec. 12 Pages, Attachment 3 Pages

Revised Records : No.	Date	Description (Before / After)	Page(s) Revised	Revised By (Adapter/Customer)	Remark
1	Dec./25/2020	ISSUE	-	Sun	A1

1. Feature：

- ♦ Input ： Universal 100 ~ 240 Vac / 50 ~ 60 Hz Input, without any slide switch.
- ♦ Output ： +36V / 0~1.81A
- ♦ Case Dimension ： 119 (L) *60 (W) * 36 (H) mm
- ♦ Efficiency ： Eff (av) ≧ 88%
- ♦ Safety ： I.T.E:PSE/ CB
Medical: UL / cUL/ T-mark
- ♦ EMI ： CE / FCC Class B ； Conduction & Radiation Met.
- ♦ Protection ： OVP (Over Voltage Protection)、SCP (Short Circuit Protection)、OCP (Over Current Protection)
- ♦ High frequency design，less power consumption.
- ♦ Suitable for usage at Telecommunication, Computer, Industrial Controller, & OA System.
- ♦ Meet DoE VI / ErP (Stage 2) / GEMS / NRCan / CEC / EPA

2. Input：

2.1 Voltage	Universal 100~240Vac, single phase
2.2 Frequency	50 ~ 60 Hz
2.3 Current	1.6A Max.
2.4 Inrush Current	80A Max. / 240Vac (Cold start at 25 ℃，full load)
2.5 Efficiency	Eff (av) ≧ 88% (At 115 Vac & 230 Vac)
2.6 Power Consumption	Pi ≦ 0. 21 W (At 230Vac & No load)

$$※Eff_{(av)} = \frac{E_1 + E_2 + E_3 + E_4}{4}$$

E1=efficiency with 25% rated load ; E2= efficiency with 50% rated load

E3=efficiency with 75% rated load ; E4= efficiency with 100% rated load

3. Output：

3.1 DC Output	Voltage	+36V ± 5%
	Current	1.81A Max.
	Regulation	34.20Vmin. ~ 36.00Vtyp. ~ 36.80Vmax.
	Ripple & Noise	360mV Max.
	Total Power	65 W Max.

Remark : For ripple & noise measurement, use a 20MHz bandwidth frequency oscilloscope, and add a 0.1μF multilayer Cap. and a Low ESR Electrolytic Cap. (10 μF) at output connector terminals. (At nominal line voltage, full load)

4. Protection :

4.1 Over Voltage Protection (OVP)	(V out *150%) Max.
4.2 Short Circuit Protection (SCP)	Automatic recovery after short-circuit fault being removed
4.3 Over Current Protection(OCP)	(I out *170%) Max.

Remark ： When Short Circuit Protection or Over Current Protection is activated,the power supply will shutdown automatically. Once the abnormal condition resulting in the failure being removed, the power supply will restart accordingly. When Over Voltage Protection is activated, the power supply will shutdown latch .

5. Safety、EMI and EMC Requirement：

5.1 Safety Requirement

a. Safety ： I.T.E:PSE/ CB
Medical: UL / cUL/ T-mark

b. Dielectric Strength ： Cut off current 10mA

(1)	Primary to Secondary	4000Vac for 1 Minute
(2)	Primary to Frame Ground	1500Vac for 1 Minute

c. Insulation Resistance ：

(1)	Primary to Secondary	10 M ohm for 500Vdc
(2)	Primary to Frame Ground	10 M ohm for 500Vdc

5.2 EMI Requirement ： CE / FCC Class B ； Conduction & Radiation Met.

5.3 Leakage Current ： Less than 0.3mA

6. Operation and Environment Performance：

6.1 Temperature Range

Operating	+ 0ºC ~ + 40ºC
Storage	- 20 ºC ~ + 80ºC

6.2 Humidity Range(Non-condensing)

Operating	20% ~ 80% RH
Storage	10% ~ 90% RH

6.3 Cooling：By natural air.

7. M.T.B.F.： 300,000 Hrs.(Calculated Hours At 25ºC，By Telcordia SR-332)

8.Mechanical :

8.1 Weight : 310 g Typical

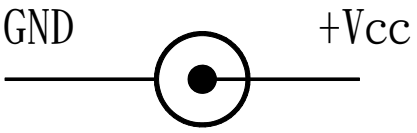
8.2 Cable Type : Black UL1185 18AWG
(Wire + Plug)
Plug : ø5.5*ø2.1*9.5mm
(Tuning Fork & Cannelure)

8.3 Cable Length : 1500mm

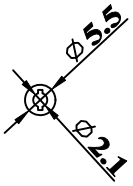
8.4 Case Dimension : 119mm(L)*60mm(W)*36mm(H)

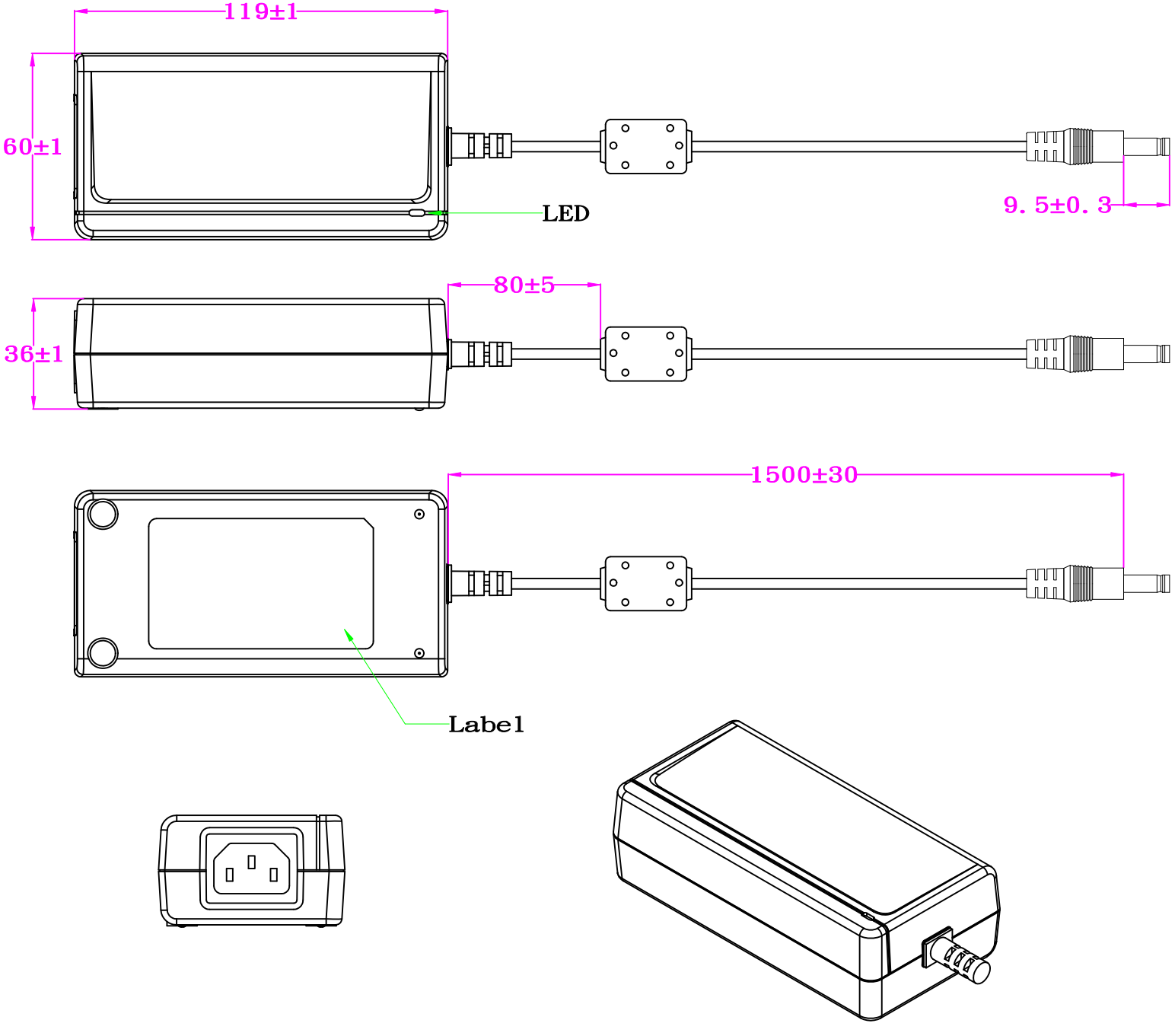
8.5 Material Flammability : UL 94V-0

8.6 External Appearance : As drawing below (Scale → mm)



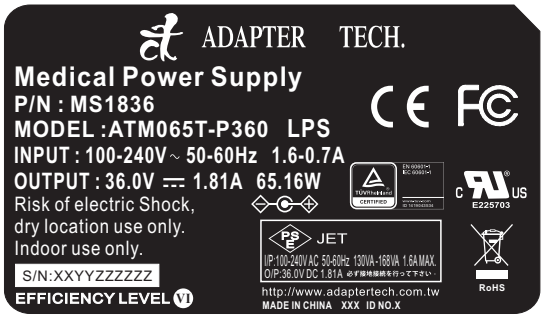
Output Cable Plug Pin Assignment





8.7 Spec. Label Materials : Metalized Polyester Label (Silver Gloss)
Color : Black Background with Silver Printing
Label Dimension : 70.8mm(L)*40.8mm(W)+/-0.1mm
Label Thickness : 75#

100%

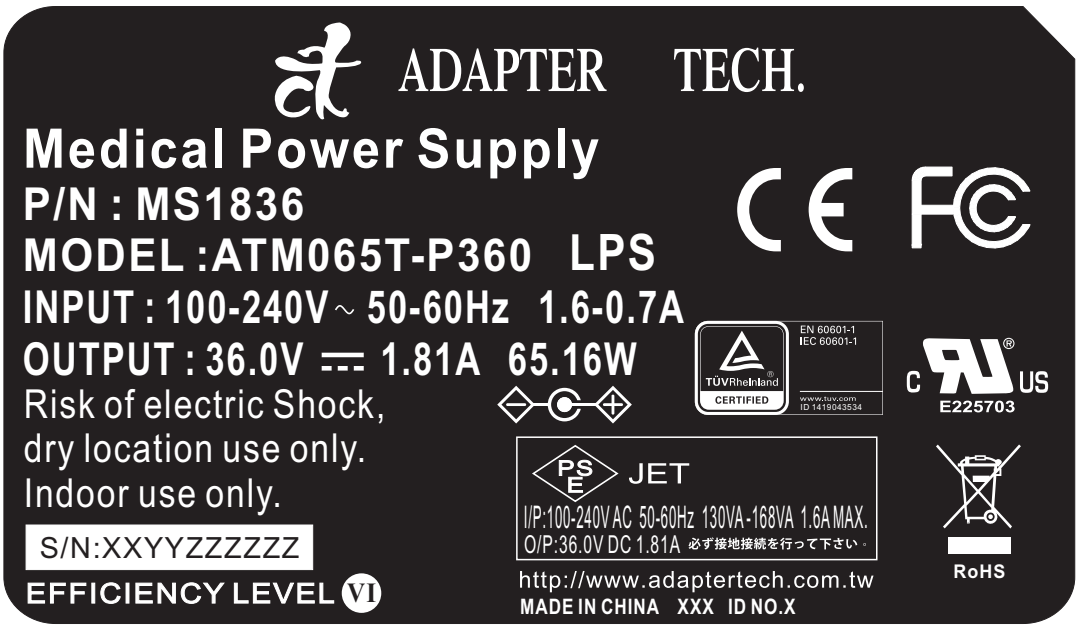


"XXX"
Label supplier's code.
It is accurate that the number of words depends on the real finished product.

ID NO."X"
Manufacturer's code.
It is accurate that the number of words depends on the real finished product.

S/N:XXYYZZZZZZ
XX=Year(2 yard)
16:2016
YY=Week(2 yard)
ZZZZZZ=Serial number (6 yard)

200%



Label Part No.: 9443115720
REV. : A

A. Line Regulation Test

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
90Vac / 50 % Load	34.20 V ~ 37.80V	35.91 V	35.96 V	35.89 V
115Vac / 50 % Load	34.20 V ~ 37.80V	35.91 V	35.96 V	35.89 V
132Vac / 50 % Load	34.20 V ~ 37.80V	35.91 V	35.96 V	35.89 V
180Vac / 50 % Load	34.20 V ~ 37.80V	35.91 V	35.96 V	35.89 V
230Vac / 50 % Load	34.20 V ~ 37.80V	35.91 V	35.96 V	35.89 V
264Vac / 50 % Load	34.20 V ~ 37.80V	35.91 V	35.96 V	35.89 V

B. Efficiency Test

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac	88 % Min.	89.23 %	89.27%	89.20 %
230Vac	88 % Min.	89.99 %	89.95%	89.97 %

$$Eff_{(av)} = \frac{E_1 + E_2 + E_3 + E_4}{4}$$

E1=efficiency with 25% rated load ; E2= efficiency with 50% rated load

E3=efficiency with 75% rated load ; E4= efficiency with 100% rated load

C. Load Regulation Test

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 0 % Load	34.20 V ~ 37.80V	36.01 V	36.05 V	35.99 V
115Vac / 50 % Load	34.20 V ~ 37.80V	35.91 V	35.96 V	35.89 V
115Vac / 100 % Load	34.20 V ~ 37.80V	35.77 V	35.82 V	35.75 V
230Vac / 0 % Load	34.20 V ~ 37.80V	36.01 V	36.05 V	35.99 V
230Vac / 50 % Load	34.20 V ~ 37.80V	35.91 V	35.96 V	35.89 V
230Vac / 100 % Load	34.20 V ~ 37.80V	35.77 V	35.82 V	35.75 V

D. Ripple & Noise Test

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	360mV Max.	63.4 mV	60.8 mV	65.4 mV
230Vac / 100 % Load	360mV Max.	31.2 mV	32.1 mV	33.3 mV

E. Inrush Current

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
240Vac / 100 % Load	80A Max	63 A	65 A	64 A

F. Over Current Protection

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	(Iout *170%) Max.	130 %	130 %	131 %
230Vac / 100 % Load	(Iout *170%) Max.	131 %	132 %	133 %

G. Short Circuit Protection

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	Auto Recovery	OK	OK	OK
230Vac / 100 % Load	Auto Recovery	OK	OK	OK

H. Input Power Consumption(No Load)

Test Result ：

Test condition	Spec.	Reading 1	Reading 2	Reading 3
230Vac / 0 % Load	≦ 0.21 W	0.08 W	0.08 W	0.08 W

INSTALLATION INSTRUCTION

Manufacturer: ADAPTER TECHNOLOGY CO LTD

Models: ATM065T-Px (where x = 120, 150, 180, 190, 240,300,360 or 480)

1. The switching power supply is intended used for medical electrical equipment.
   The equipment has not been evaluated applied parts that suitable for direct patient contact! It shall be evaluated for the end system configuration.

2. Circuit diagrams, descriptions and component parts list will be made available only upon request when servicing is required. Please, contact the address below for related information.

ADAPTER TECHNOLOGY CO LTD
6F-9, No.258, Liancheng Rd., Zhonghe District, New Tapipei City 235, Taiwan

3. Environmental conditions:

Transportation temperature, humidity, pressure	-20 to +80°C / 10% ~ 90 %, 540 ~ 1060 hPa
Storage temperature, humidity, pressure	-20 to +80°C / 10% ~ 90 %, 540 ~ 1060 hPa
Operation temperature, humidity, pressure	0°C ~ 40°C / 20% ~ 80 %, 540 ~ 1060 hPa

4. Although the equipment has been evaluated according to IEC60601-1-2. The EMC assessment shall be conducted for the end system configuration.

5. Input Rating: 100-240Vac, 50-60Hz, 1.6A-0.7A

6. The output load shall not exceed the rating:

Output:

Model	O/P Voltage	O/P Current
ATM065T-P120	12V	5A
ATM065T-P150	15V	4.34A
ATM065T-P180	18V	3.62A
ATM065T-P190	19V	3.43A
ATM065T-P240	24V	2.71A
ATM065T-P300	30V	2.17A
ATM065T-P360	36V	1.81A
ATM065T-P480	48V	1.36A

7. Any inspection and maintenance tasks must be carried out only by authorized by the manufacturer service personnel.

8. The classification of the equipment is:
   - Class I
   - The equipment has not been evaluated applied parts
   - Not AP or APG type
   - Not intended for use in the presence of flammability an aesthetic mixture with air or with oxygen or nitrous oxide
   - Intended for continuous operation
   - Protection class IPX0

The equipment provided with two fuses (F1, F2) on line and neutral conductor, fuse rated T3.15AL, 250Vac, size approximately 8.5 x 8.5 x 4.0 mm.

9. Expected service life of the power supply: 100,000 hours

10. WARNING: To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth

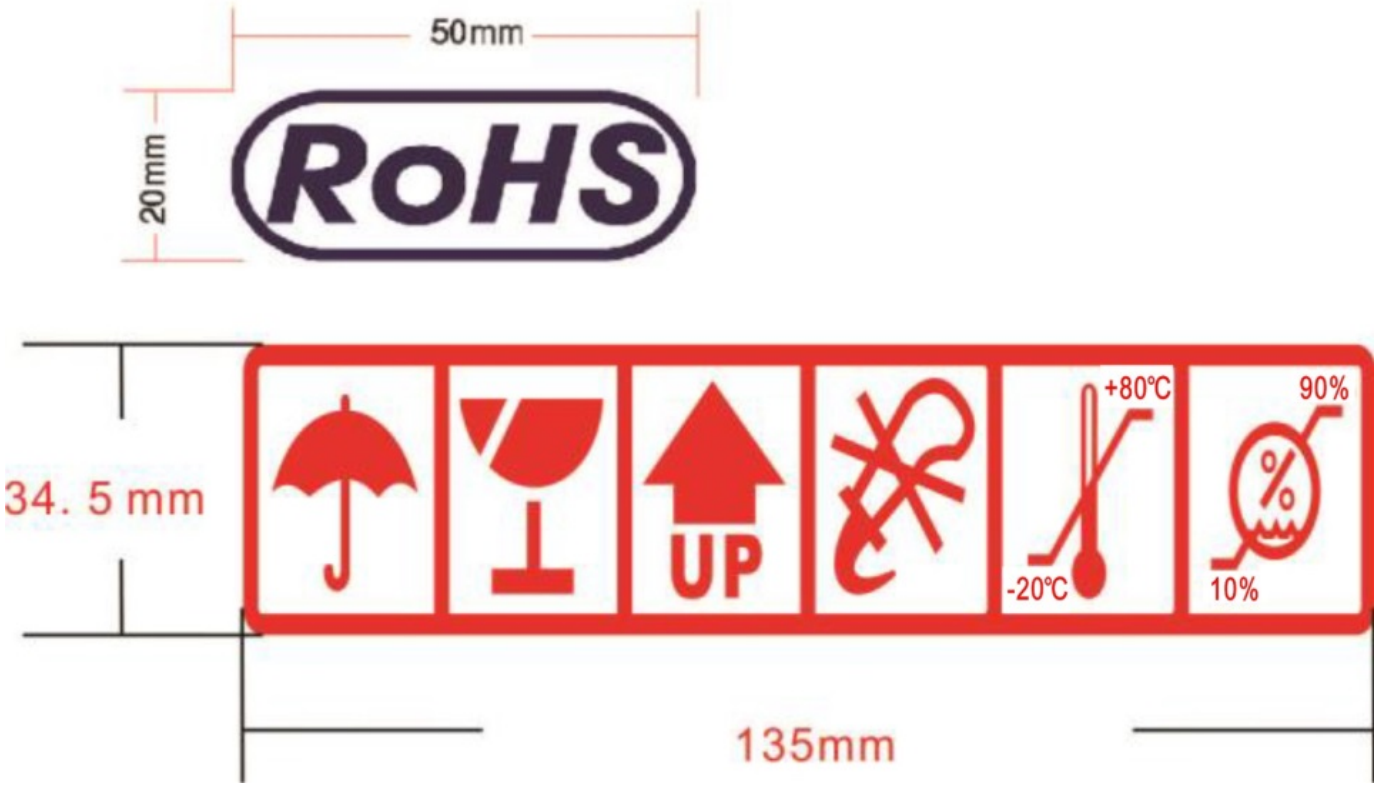
11. WARNING: Do not modify this equipment without authorization of the manufacturer

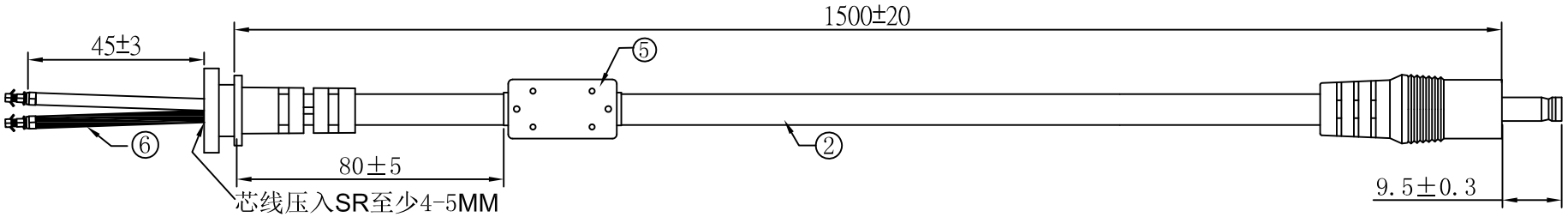
12. The requirements of IEC/EN 60601-1 shall be observed during the installation in the final system.

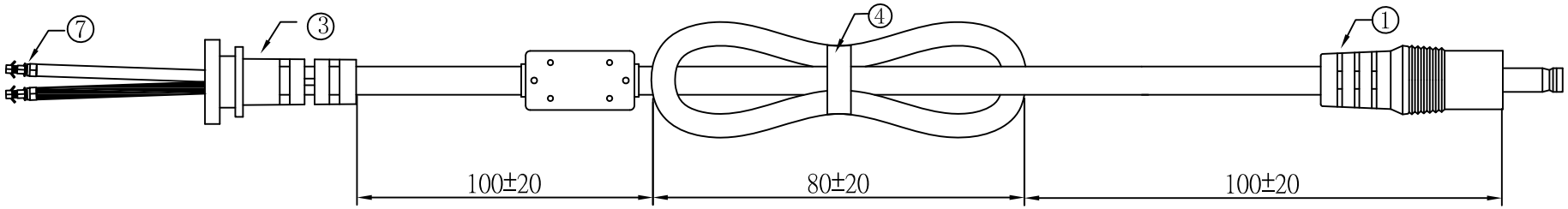
13.  "Do not dispose this product in the household waste, please, follow the respective national law for proper disposal."

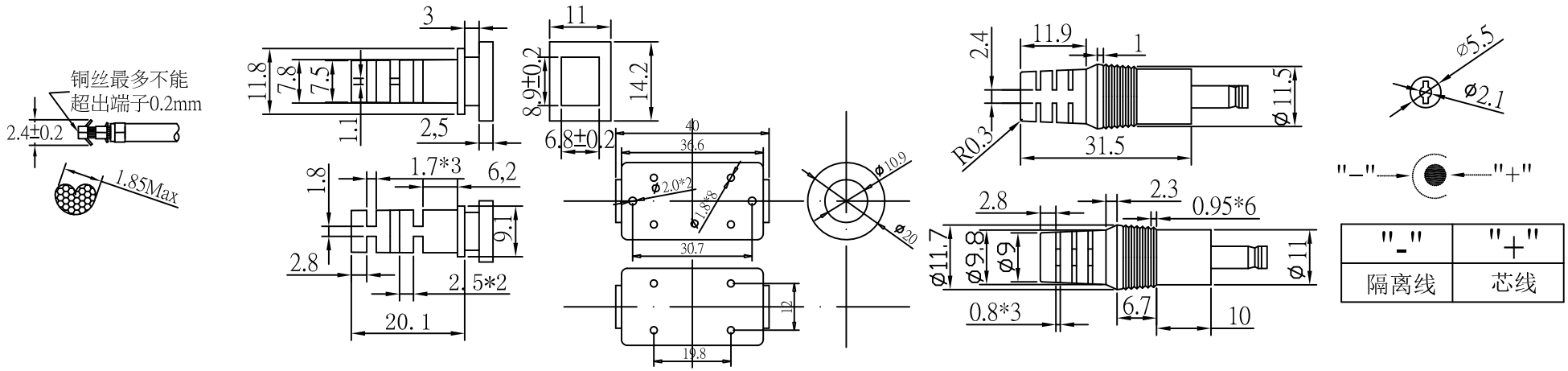
ATM065T-P系列外箱印刷:

側嗲:上方印刷圖示









"-"	"+"
隔离线	芯线

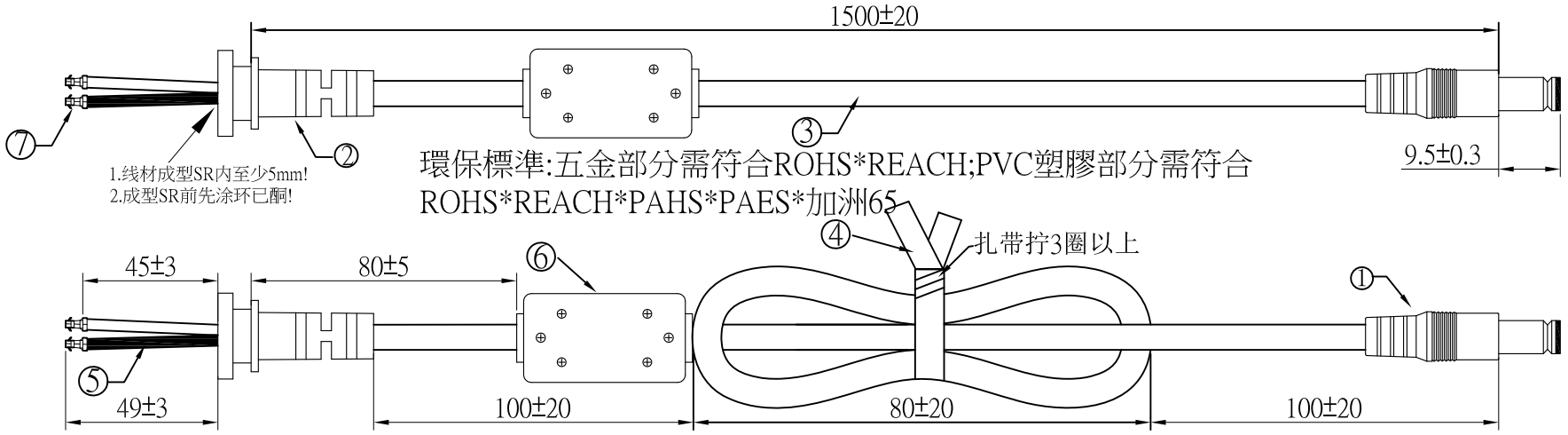
注意:此圖面所需材料符合"ROHS"標準

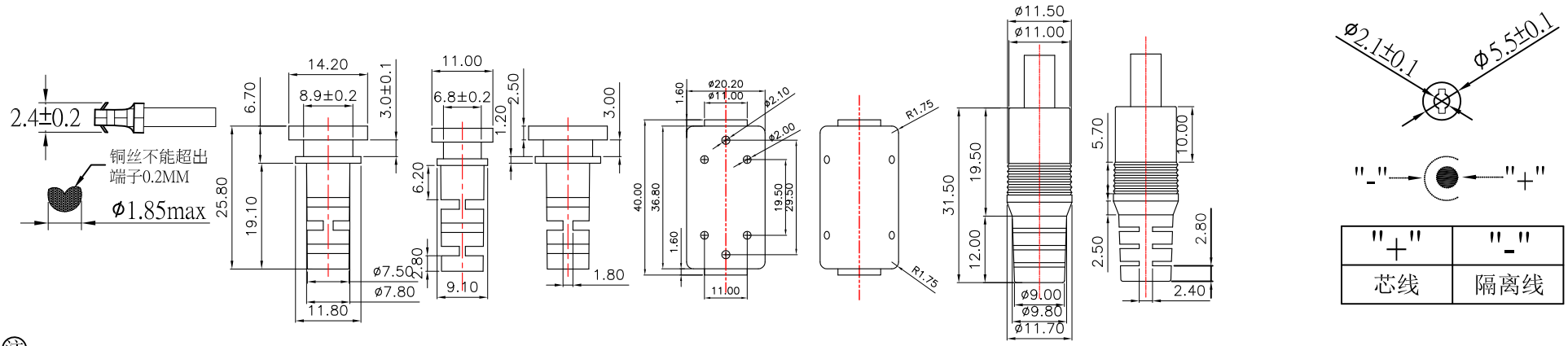
① 5.5*2.1*21音叉车沟黑色半边,外模P-184號模(二次成型),用料外PVC60P黑色
② UL 1185 18AWG(0.18*34)单芯隔离线(0.12*54) BK亮 OD:3.5裁線長度:1560+10/-0
③ SR-310号模(包胶),用料PVC75P黑色 :吊重:1米/20磅/60秒
④ PE无鐵芯紮帶12CM
⑤ 铁芯:14.2*28.5*6.35,外模SR-118号模,用料PVC60P黑色
⑥ 热缩套管ø1.5*51
⑦ 1.8双钩机板端*2PCS(进文提供:P1815-A)
⑧ 單位:MM

一般公差表			
1.0mm以下	±0.1mm	15.0mm以下	±0.60mm
2.0mm以下	±0.15mm	20.0mm以下	±0.80mm
3.0mm以下	±0.20mm	30.0mm以下	±1.0mm
10.0mm以下	±0.50mm	30.0mm以上	±1.2mm

版次	变更内容	日期
01	新出	2018/01/31

料號	R44M181501B8		
客戶	阿達特	制圖	陶胜英
頁數	01	審核	
		批準	
泰岳電子有限公司			
圖號	ADT-5173	日期	2018/01/31





"+"	"-"
芯线	隔离线

注

① 5.5*2.1*21音叉叉沟黑色半边,外模P-224(泰岳P-184)号模(两次成型),用PVC 60P黑色胶粒成型
② SR-202(泰岳SR-310)號模,用PVC 75P黑色膠粒成型 吊重:1米/20磅/60秒
③ UL 1185 18AWG(TC/0.18*34)*1C+隔离线(TC/0.12*54) 黑亮 OD:3.5 裁線長度:1560+10-0
④ PET无鐵芯紮帶10CM黑色
⑤ 黑色热缩套管:φ1.5*50
⑥ 铁芯规格:14.2*28.5*6.35,外模T-011(泰岳SR-118)號模,用PVC 60P黑色膠粒成型
⑦ φ1.8双钩基板端子*2PCS
摇摆测试标准:吊重200g,左右60度,40次/分钟,摇摆2000次
絕緣阻抗:20MΩ 導通阻抗:1.5ΩMAX
單位:mm

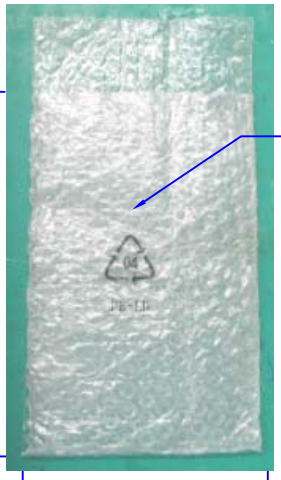
一般模具尺寸公差表	
長度(MM)	公差範圍(MM)
5以下(含)	±0.2
10以下(含)	±0.5
30以下(含)	±1
31以上(含)	±1.5

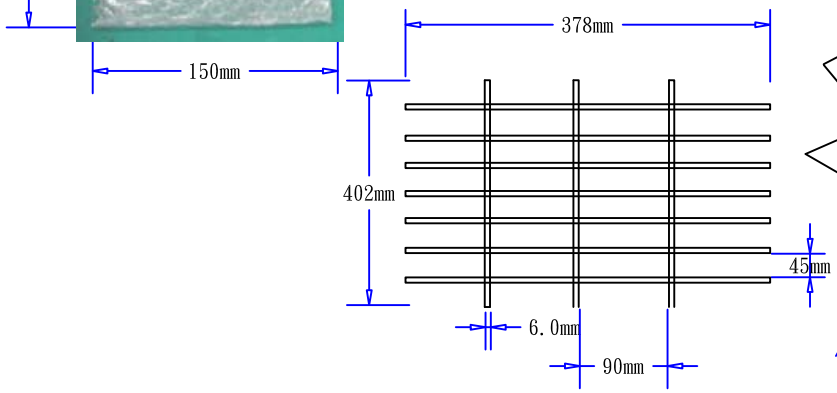
版本	變更內容	變更人	日期
A	初出	吳青喜	2018-02-03

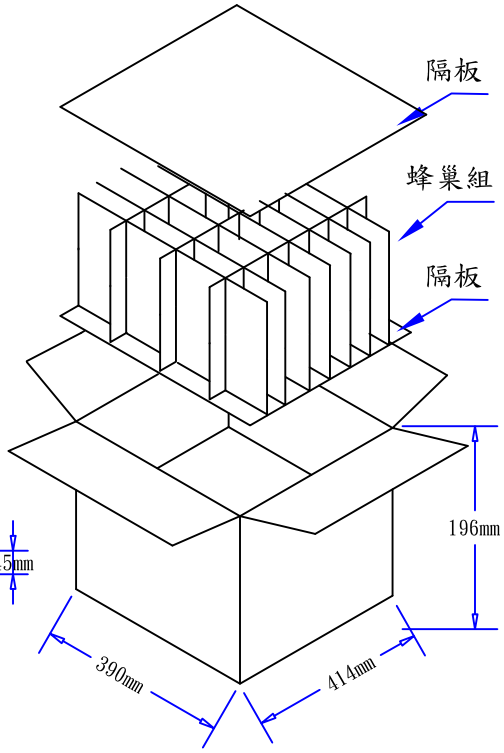
GD 廣多貿易(廣全)有限公司
廣東省東莞市大朗鎮蔡邊村白雲前工業區雲蓮路一街6號
TEL:0769-83019738 83019739 FAX:0769-83201033

料 號	R44M181501C1		
客 戶	阿达特	制 圖	吳青喜
廣多版本	A	頁 數	01/01
客戶版本	01	審 核	
		批 准	
圖號	ADT-Q0486	日期	2018-02-03

REVISIONS				
SHOW	REV	DESCRIPTION	DATE	APPROVED
0	A	依阿達特尺寸,初版制作	2012/09/13	







零件料號

9550016401	1. 隔板:402*378*6mm	k=k	2/32
	2. 數量:32PCS		
9520021901	3. 外箱:L*W*H=414*390*196mm	k=k	1/32
9560018301	4. 七刀卡:402*160*6mm(中分)	k=k	3塊/32
9560018401	5. 三刀卡:378*160*6mm(中分)	k=k	7塊/32
9540000901	6. 环保气泡袋:210*150mm*47mm	無色透明,短边單端開口,長邊中間位置印環保標志	

7. 外箱標注為外徑尺寸.
8. 成品裝入气泡袋,銘板面位於環保標志側,折合袋口后用小胶纸封口
9. 成品豎向側立裝入蜂巢內,方向須統一.

阿達特科技股份有限公司	DRAWING NO. PIS36W00019		APPROVAL 1 BY		
	UNIT mm	MODEL NO. 36W~65W	APPROVAL 2 BY		
		FILE NO. ADT-0121	CHECKED BY(ENGINEER)		DATE: 2009/06/18
	SCALE	REV. A SHEET 1/1	DRAWN BY	王月才	DATE: 2012/09/13